THE LANCET.

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The Croonian Lectures

MODERN ASPECTS OF CERTAIN PROBLEMS IN THE PATHOLOGY OF MENTAL DISORDERS.

Delivered before the Royal College of Physicians of London,

BY EDWIN GOODALL, M.D. LOND., B.S., F.R.C.P. LOND.,

MEDICAL SUPERINTENDENT, CITY OF CARDIFF MENTAL HOSPITAL.

LECTURE III.*

SIR THOMAS BARLOW AND GENTLEMEN,—Continuing my observations upon leucocytal counts in the psychoses which, by reason of their clinical manifestations, afford ground for inquiry as to a possible toxic origin, I submit to you eight records of quantitative and qualitative counts in cases of dementia paralytica.

Variations of Leucocytal Count in Dementia Paralytica.

In each case these cover a considerable period of time. I would here express my obligations to my colleague, Dr. D. L. Jackson, formerly assistant physician at the Cardiff Mental Hospital, for valuable assistance in carrying out these counts, as well as those which I presented at my last lecture. The object of these observations was more particularly to ascertain whether the qualitative leucocytal count in a remission of the disease, or in a period of obvious quiescence, differed from that observed in the active phases or at times of exacerbation. The cases I have selected comprise the best material at my disposal during the past three years; they include only one in which a remission of the disease was so pronounced and established that the patient was able to return home for a period. From my experience I should say that a remission of this kind is extremely rare amongst the rate-supported classes, and I therefore trust that some of my colleagues whose work lies amongst patients in registered hospitals or private asylums may be able to repeat and amplify these observations. Copies of my records are before you, and I need only refer briefly to the cases.

[Here the lecturer pointed out the variations in the qualitative cell counts, associated with clinical variations, as illustrated in the records of which the following (Table XI.) are a few.]

In addition to illustrating the point that an absolute and relative lymphocytosis is present in states of remission and of marked quiescence in dementia paralytica, to be replaced by polynucleosis on the occurrence of exacerbations (such as seizures, febrile states of unknown causation), the accompanying records show that the total count does not regularly vary with variations in the clinical condition, although it usually does, and that the total count is moderately high during remissions and states of quiescence. The variations that take place in the leucocytal count, with clinical variations, are rather qualitative than quantitative. Further, it appears that eosinophiles are either absent or in an extremely low proportion in these cases at all times except during remission, and even then the proportion is low. This remark applies to all the cases illustrative of different kinds of insanity of which I showed charts at my last lecture.

Summary of Observations on the Leucocytal Count.

If, now, I may extract summarily the salient points of the observations of many workers, several of whom I have quoted from, upon the leucocytal count in the psychoses which are *primâ facie* toxic in origin, I think the evidence furnished (leucocytosis, neutrophile increase) is in favour of toxæmia, not a grave toxæmia; this accords with the general clinical evidence. There is also evidence of a lymphocytal reaction in dementia paralytica, broken by a neutrophile predominance with exacerbations. We know that in various diseases of parasitic origin, such as typhoid fever, secondary and tertiary syphilis, trypanosomiasis, and others presumably parasitic, such as measles, mumps, there is a lymphocytosis; and there seems ground for the belief that this form of white cell reaction, and for the same reason (parasitic causation), is characteristic of dementia paralytica also. If in "florid" states, and in states of exacerbation of various kinds, the predominant reaction is neutrophile, that may be merely because "intercurrent" non-specific toxic agencies are operative. According to this argument such states and such reaction are superimposed merely. This hæmatological observation in respect of the prevalence of lymphocytes in dementia paralytica is a corroboration of a similar one referred to in an address I delivered in Birmingham in 1911,[1] and constitutes clinical evidence, as far as it goes, of the presence of a parasite such as the treponema. Our present information points to an absolute and relative lymphocytosis not of a pronounced kind, as the characteristic condition in the states grouped under the head of "dementia præcox," after the initial stages have passed, and in subacute and chronic mania and melancholia. The significance of this is obscure.

FERMENTS AND ANTIFERMENTS.

During 1913 a considerable amount of work has been carried on in Germany in the domain of psychiatry with the methods introduced by Abderhalden to demonstrate the presence of specific ferments in the blood serum. Fauser[2] was probably the first to apply these tests in mental disorders, and his results have been in the main confirmed by subsequent observers. The evidence is now appreciable to the effect that in dementia præcox breakdown products of the protein of the cerebral cortex and of the genital glands, in dementia paralytica of the cortex and of some other organs, are present in the circulation and give rise to protective ferments which are demonstrated by Abderhalden's methods; whereas in the psychoses known as "functional" and "constitutional" (e.g., manic-depressive insanity, paranoia) no ferments are present. For the present the main interest attaching to these observations consists in the encouragement they afford us in our attempts to diagnose between the dementia præcox group with its practically hopeless prognosis on the one hand, and confusional states and mania and melancholia on the other. In this connexion it has to be noted that anti-proteolytic substances—substances which interfere with tryptic digestion—are also found in increased amount in the serum of cases of the "organic" as distinguished from the "functional" and "constitutional" psychoses.

* Lectures I. and II. were published in THE LANCET of Dec. 5th (p. 1237) and 12th (p. 1341), 1914, respectively.

TABLE XI.—*Differential Leucocyte Count in Percentages on 400 Consecutive Leucocytes.*

General paralytics in remission.	Date of admission.	Date of examination.	Leucocytes per c.mm. Average of 3 counts of 400 each	Polymorphs.	Small lymphocytes.	Large lymphocytes.	Eosinophiles.	Basinophiles.	Remarks.
W. T. M.	12/5/10	7/3/11	—	61·4	17·8	18·5	2·0	—	In remission, but not pronounced.
		5/7/11	9,000	51·75	32·25	15·50	0·50	0·25	Same state.
		17/7/11	17,400	86·5	11·0	2·5	—	—	Shortly after minor seizure with rise of temperature.
		28/6/13	11,400	78·50	17·50	5·00	0·00	1·00	In seizures.
		15/9/13	11,400	72·50	19·00	8·00	0·50	0·00	Seizures previous day.
		22/9/13	12,000	65·50	26·50	7·50	0·50	0·00	Confined to bed; faulty habits. Going steadily down. Died 11/1/14.
S. J. C. K.	2/1/11	23/3/11	15,484	55·0	23·75	17·00	4·0	0·25	Remission.
		25/5/11	—	41·7	20·25	30·50	5·75	1·75	"
		3/2/12	8,400	74·75	16·25	8·00	1·50	—	1 week after seizure.
		24/10/12	13,900	70·75	10·75	15·50	2·50	0·50	In relapse; has been so some weeks; demented; restless.
		11/1/13	11,200	60·25	30·00	8·50	1·75	0·00	Partial remission; works in ward.
		24/6/13	9,300	85·00	9·00	4·50	0·00	1·50	Confused; temperature 101° without cause.
M. D.	10/2/11	1/8/11	13,520	—	—	—	—	—	Very ill mind and body. Florid state. On 11/2/11 and 14/2/11 w.b.c. = 19,950 and 23,000. Had very acute cellulitis of right arm April, 1911; healed May. Latter part July and August in remission, especially physically. Working; clean. Began to improve mentally in August, 1911. Remission. Discharged November, 1911.
		7/8/11	9,400	59·5	27·25	11·50	1·75	—	
		17/8/11	—	46·75	43·75	5·80	2·0	1·25	
		21/11/11	—	56·50	25·00	16·00	2·50	—	
		The marked remission was due to the intercurrent disease (cellulitis).							
	Re-admitted 24/10/12	25/10/12	10,100	75·0	13·50	10·25	0·50	0·50	Readmitted in mania of G.P.I.; noisy, turbulent, very exalted, destructive.
			10,800	53·50	35·50	11·0	0·5	0·00	In remission; gaining weight.
		28/2/13	11,200	55·00	24·75	20·00	0·00	0·25	Remission maintained.
		9/3/13	11,200	56·25	32·00	12·00	0·50	0·25	Good remission; working.
		12/6/13	10,800	64·00	27·50	8·00	0·50	0·00	Still in remission; especially physically; working.
		14/8/13	9,800	66·50	26·50	7·00	0·00	0·00	The same; works; demented; clean.
		15/9/13	14,400	70·00	23·00	6·50	0·00	0·50	Confused; refusing food; up still.
		19/11/13	11,800	77·50	17·00	5·50	0·00	0·00	Taken in midst of seizures; retention of urine; refuses food. Going down rapidly. Died 29/12/13.
T. C.	9/6/11	10/6/11	26,800	89·50	2·00	8·25	—	0·25	Florid state; very ill mind and body.
		2/10/11	11,600	69·00	19·00	12·0	—	—	Much quieter; not troublesome; incoherent and untidy.
		21/11/11	—	61·50	12·00	22·75	2·75	1·00	Remission, but not a pronounced one; working; tidy.
		16/1/12	—	57·25	17·00	24·50	1·00	0·25	Remission continues fairly well marked, not one pronounced kind; working; tidy.
		25/10/12	14,200	78·0	12·50	8·75	0·50	0·25	In relapse and has been for some weeks; restless and noisy.
		14/11/12	—	73·50	7·25	18·75	—	0·50	Noisy; troublesome in bed.
		18/12/12	17,200	92·25	4·00	3·75	—	—	In extremis after seizures; died same night.
D. L.	2/9/12	13/11/12	10,000	—	—	—	—	—	Three seizures on 25/12/12. Temperature 100°. Hemiparesis of the right side; confused and wandering.
		27/12/12	17,000	79·50	9·75	9·75	1·00	0·00	
		10/2/13	10,400	65·75	19·75	12·50	1·75	0·25	Four hours after seizures.
		17/2/13	12,000	79·50	11·75	8·5	0·25	—	Large number of seizures.
		11/4/13	21,000	84·00	10·75	5·25	0·00	0·00	Three seizures night of 10/4/13; confused.
		23/5/13	8,000	52·50	37·00	10·50	0·00	0·00	Good remission; up and about.
		29/5/13	7,800	53·25	33·00	12·25	1·25	0·25	Still in remission.
		24/6/13	23,000	92·00	4·00	4·00	0·00	0·00	Taken in seizures.
		25/7/13	12,200	60·00	30·00	9·00	0·50	0·50	Quiescent; up; clean (no work).
		28/7/13	11,600	63·50	24·00	6·00	0·00	1·50	Seizures starting. Put to bed about 27/7/13.
		31/7/13	18,000	85·00	9·00	6·00	0·00	0·00	In seizures; severe.
		29/8/13	9,200	65·00	28·50	5·50	1·00	0·00	Restless and confused.
		10/9/13	11,000	61·00	25·00	9·00	2·00	1·00	Same. Died 29/10/13.
T. G.	25/2/11	12/11/12	11,000	64·02	21·75	13·50	0·75	—	Partial remission, but getting dirty (quiescent, rather).
		20/5/13	10,800	69·75	31·25	9·00	0·00	0·00	Remission; plays cards; up and about.
		22/7/13	12,200	49·50	39·50	9·00	1·00	1·00	Good remission as above; working.
		9/9/13	9,200	63·00	29·50	7·50	0·00	0·00	More demented; not working.
		6/11/13	14,500	60·00	30·00	10·00	0·00	0·00	Same.
		3/12/13	9,400	72·00	21·50	6·00	0·50	0·00	In seizures (minor).
		2/1/14	21,800	74·00	13·00	13·00	0·00	0·00	Temperature 102°. Cannot stand or speak; "suppressed fit" according to attendant.
		21/1/14	16,600	65·50	19·50	15·00	0·00	0·00	Up again; getting more demented; clean.
		29/1/14	15,400	69·00	16·50	14·50	0·00	0·00	Up again; not working.
		10/2/14	14,600	79·00	13·00	8·00	0·00	0·00	Temperature 99·2°. Confused; "suppressed fit."

They are increased—and more especially in exacerbations of or in pronounced cases of the malady—in epilepsy, dementia præcox, dementia paralytica, dementia senilis, but not in simple functional melancholia nor in paranoia. These are the conclusions of Pfeiffer and de Crinis[3] (1913), who have, I think, done the most extensive work in this direction. I give here tables of antitryptic tests which I have carried out. The technique I employed was that recommended by Pfeiffer and de Crinis, but the serum to be tested was used in a dilution of 1 : 40 and not 1 : 20, as in their cases, as I found that the sera of my patients prevented trypsin digestion too strongly in the latter dilution. Hammersten's casein (1 per cent.) and Merck's trypsin (0·1 per cent.) were used, freshly prepared each time. The titre of the trypsin was ascertained, the solution being placed against a fixed quantity of the casein solution in amounts increasing by 0·1 c.c., from 0·1 c.c. to 1·2 c.c. The tubes, after 30 minutes in the incubator, had three drops of an acetic-alcohol mixture added in each case. The first tube to remain clear—free from cloudiness—at the close of 30 seconds was taken as indicating the titre of trypsin. The inhibiting power of the serum from different cases was ascertained by adding a fixed quantity of the diluted serum to the trypsin-casein solution, in progressively increasing strengths of trypsin, as above indicated. The tubes were treated as above. The first clear tube in each series was noted, and the figure compared with the titre figure. If the first tube clear in the titre series were 0·7, in the control serum 1·3, and in a patient's serum 2·0; 1·3 less 0·7 = 0·6; 2·0 less 0·7 = 1·3. Multiplying these figures by 100, we get 60 and 130 respectively, representing the antitryptic units in the control and in the patient respectively. This explanation will serve to make the accompanying Tables (XII. and XIII.) comprehensible. It will be seen that the antitryptic unit is, with few exceptions, higher for the patients tested than for the control (a farm patient, chronic, quiet dement) on the same date. It is highest in cases of active dementia paralytica and senile dementia (S., Y., Bl., C), all near death (katabolism marked). One case (Sm.), recurrent confusional insanity, unit = 130, is anomalous. Cases of dementia paralytica in remission (St., W.) have a lower figure than the active cases (S., Y.).

Nothing is known as to the nature of these antitryptic substances; at present, at any rate, there is no sufficient evidence to show that they are connected with the *abbau produkte* upon which the Abderhalden test depends, or with products of incomplete protein-metabolism. The important point about this modern work in respect to ferments and antiferments in the serum, as far as it concerns the domain of psychiatry, is that it affords considerable reason for hoping that by its means we shall be enabled to distinguish between "functional" and "organic" disease, or that which is recoverable and that which is irrecoverable (in the present state of our knowledge). But this work does not throw light upon the ultimate problems of pathogenesis in the "organic" disorders. It is precisely in the instances in which ferments and antiferments are shown to exist that the products of degeneration of the nervous or noble element of the cerebral tissue are to be found by the histological methods of Alzheimer, together with amœboid glia-cells in abundance, which themselves undergo degeneration when their function of removing and transporting breakdown products of the nervous tissue to the perivascular lymph-channels has been fulfilled. In these cases the glia-cells and lymph-channels

TABLE XII.—*Antitryptic Tests.*

Date.	Titre system.	G. Control.	B. Dementia præcox. Still fairly active.	H. Same class as B.	P. Dementia præcox.	R. Recurrent mania.	S. G.P.I. Active disease near death.	St. G.P.I. Remission (marked).	T. Dementia præcox. Chronic	P. Tabes delusional, not active.	T. Mild confusional.
	The figures below indicate antitryptic units.										
1/4/14 (serum 1 : 20, first tube clear).	0·8	90	140	150	—	—	—	—	—	—	—
3/4/14 (serum 1 : 40 from now on).	0·5	40	80	80	—	—	—	—	—	—	—
15/4/14.	0·6	90	110	100	70	—	—	—	—	—	—
22/4/14.	0·8	50	100	70	—	100	—	—	—	—	—
29/4/14.	0·8	70	—	90	—	60	150	—	—	—	—
6/5/14.	1·0	60	60	—	—	—	120	60	90	—	—
13/5/14.	0·8	50	—	—	—	—	160	—	—	80	100
20/5/14.	0·7	60	—	—	—	—	Died 17/5/14	80	—	—	90
27/5/14.	0·7	70	—	—	—	110	—	—	—	—	100
3/6/14.	0·9	60	—	—	—	—	—	—	—	—	—
10/6/14.	0·9	—	—	—	120*	—	—	—	—	70†	—
12/6/14.	0·8	40	—	—	—	—	—	—	—	—	—

* Boil on face.

† Better (quiescent).

TABLE XIII.—*Antitryptic Tests.*

Date.	Titre system.	W. G.P.I. Remission.	Sm. Confusional. Recurrent.	Y. G.P.I. near death.	Bl. Senile dementia. Breaking up.	C. As last.	R. Senile mania.	L. G.P.I. subacute.
	The figures below indicate antitryptic units.							
13/5/14 Serum 1 : 40.	0·8	70	—	—	—	—	—	—
20/5/14	0·7	—	130	170	—	—	—	—
27/5/14	0·7	—	—	Died, 22/5/14	140	130	—	—
3/6/14	0·9	100	—	—	130	Died, 1/6/14.	100	100
10/6/14	0·9	80	—	—	—	—	—	—
12/6/14	0·8	—	50*	—	120	—	80	70

* Much improved.

For controls, see corresponding dates in Table XII.

around the cerebral blood-vessels are to be seen loaded with the products of disintegration, which of course pass into the circulation. The nature of these breakdown products requires to be investigated by micro-chemical methods.

INFLUENCE OF INTERCURRENT DISEASE.

I would now ask your attention to the subject of the amelioration and cure of mental maladies through the agency of intercurrent disease, and of methods based upon this object-lesson of nature. Amongst the general diseases which are instrumental in this manner, typhoid fever, erysipelas, and ague are probably the most potent. Within the last year I have seen two cases respectively of stupor and of melancholia, in which scarlet fever was followed by amelioration, in one of them recovery taking place. Severe attacks of asylum dysentery also produce amelioration. But these diseases do not appertain to any particular class, such as that of the specific fevers; neither can it be said that the therapeutic effectiveness of a malady depends upon the degree of fever associated with it. This is in accord with experience obtained with methods, hereafter to be referred to, for the promotion of leucocytosis; the beneficial result is not necessarily associated with pyrexia. In what manner the cure of mental disorder by intercurrent bodily disease is effected, we are ignorant. It is idle to enter into explanations of a purely hypothetical kind, and the most I shall allow myself is to say that the suggestion put forward by Kauffmann, to which reference was made in the first lecture, to the effect that the improvement in question is due to quickening of oxidation and of removal of products of metabolism, is worth attention. In the meantime we have to take note of the fact that a hyperleucocytosis is frequently present in these intercurrent maladies. I have mentioned above certain diseases which have a particularly favourable effect upon recoverable insanity; others which often exercise a powerful influence for good are pneumonia and septic infections, especially extensive cellulitis. It is mainly in mania, melancholia, and confusional states, and in comparatively early cases, that one sees marked improvement and cure, but sometimes also in apparently hopeless cases of long duration. Stuporose states, such as nowadays would probably be termed "hebephrenia," are also benefited. I have never seen a case of the katatonic variety of dementia præcox improved in this way, nor one of insanity with epilepsy, nor of systematised delusional insanity, but as regards this last I have never had a case under observation in the very early stage. It is therefore the psychoses which lend themselves to the theory of a toxic origin which are benefited.

As regards dementia paralytica, all with experience have observed the remarkable remissions induced by intercurrent disease. This is usually of a local kind, taking the form of extensive cellulitis or septic abscess in consequence of the habits and predisposition of the patient. High fever of long duration is usual, and the illness is severe. On recovery the patient frequently has a pronounced remission, so that he can be discharged to the care of his friends, and remains comparatively well for a year or more. My experience in this regard has been with cases of the disease several months to a year and more old; and I should say, judging by the literature, that reliable records of cases in which a remission was induced by intercurrent illness quite early in the disease are very uncommon. It is especially these which would be of interest. Instances of remission of extraordinary duration are on record; thus, Jurmann,[4] a Russian observer, records cases which lasted from 4 to 12 years, following upon phlegmon of a limb, gangrene of the lung, typhoid fever, and extensive burns. Such instances serve to show that the action of the causative agent (? spirochæta) or agents can be checked.

Attempts have been and are being made to benefit by the example furnished of the amelioration and cure of mental disorders by the agency of intercurrent bodily disease. In the absence of knowledge of the *modus operandi* in these cases, our efforts are at present limited to the application of methods calculated to produce leucocytosis or fever. Such indications as we possess point, I think, to the propriety of the former rather than the latter. Physicians up to some 30 years ago would appear to have favoured the hypothesis that intercurrent disease acted through the medium of the fever which accompanied it, or possibly of the "counter-irritation," in the case of localised inflammation, such as cellulitis. Up to 25 years ago blisters were applied over the mastoid processes, in cases of stupor especially, but the earlier practice of placing a seton in the nape of the neck or of blistering the scalp had been abandoned. These methods were sometimes based upon the hypothesis that peripheral stimulation of the cranial and cervical nerves might favourably influence the cerebral cortex, more commonly upon the theory that a "reaction"—by which an alteration of cerebral metabolism was probably meant—could be induced. Next in order came the attempts to promote a sterile abscess in such parts as the loin or buttock by means of turpentine. These have not found favour, although Bruce[5] and others have recorded cases of mania in which the attack was arrested and recovery hastened, mental improvement being associated with great proportional increase in the neutrophile cell count. The difficulty and risk associated with the nursing of an irresponsible and restless patient, of faulty habits, under the circumstances, can be appreciated.

TREATMENT BY NUCLEINATE OF SODA.

Since about 1909 the drugs used, chiefly hypodermically, have been such as promote leucocytosis; thus, cinnamate of soda, nucleinic acid, and nucleinate of soda. The last-named is now most in vogue, and has been mainly employed and advocated by Fischer, of Prague, and Donath, of Budapest, more especially for the purpose of inducing remissions in dementia paralytica, but of late also for promoting recovery in dementia præcox. Fischer[6] reported in 1909 upon 22 cases of dementia paralytica, in which, by the hypodermic injection of sodium nucleinate, a leucocytosis of 16,000 to 25,000 was produced, lasting three days. In 4 long-lasting remission was obtained, 4 died, and the rest had remained stationary since 1908 (date unmentioned). Of 22 untreated cases none had remissions and 8 died. In a second series the dosage was ½ to 3 grammes in aqueous solution every three to five days. Of 10 patients so treated, 5 showed well-marked remission, which later passed off. Of 10 controls, only 1 showed a remission, due to an intercurrent septic process. Donath[7] has had a large experience in this treatment, and is its main advocate. He first recommended a 2·5 per cent. to 3 per cent. aqueous solution of sodium nucleinate, and injected 50–100 c.c., and gave eight injections at intervals of five to seven days. The temperature only rose 2 or 3

degrees after injection and fell to normal in about three days. A leucocytosis of 21,000 per c.mm. was produced on the average, but as much as 61,000 was reached. His first series comprised 21 cases of dementia paralytica. Ten were improved to the extent that they were able to work and earn money, and 5 so that they returned home; 6 were unchanged. The longest duration of improvement was three years. In a second series 3 out of 15 were improved to the extent that they could work as before; 6 were merely improved, the remaining 6 not improved. Hüssels[8] used doses of from 1 to 2·5 grammes in aqueous solution, as much as 100 c.c. being injected at a time and every four days, seven injections in all. Pyrexia reached 40·3° C., but leucocytal increase amounted to from 60 per cent. to 100 per cent., and leucocytosis lasted rather longer than pyrexia. Of 5 cases of dementia paralytica so treated, 4 were advanced in the disease; the fifth was not and showed evident improvement. Lomer,[9] with doses of 4 grammes in 100 c.c. of water, had no good efforts. Jurmann[10] obtained improvement in 7 out of 17 cases of dementia paralytica, as indicated by evidence adduced. Itten,[11] who treated 9 cases of dementia præcox without any permanent benefit, employed the nucleinate in quite insufficient doses, so that his results must be discounted. The necessity for intensive treatment was dwelt upon by Donath in his communication upon this method at the last International Congress of Medicine. Lépine[12] had no success in 13 cases of dementia præcox, but claims to have obtained 8 cures and 2 improvements in 13 cases of manic-depressive insanity and cure in 7 out of 8 cases of "confusional" insanity, notable improvement in the one. Lundvall[13] employed up to 3·8 grammes sodium nucleinate as a single dose, adding arsenic and sodium cinnamate to increase the leucocytagogue effect. Hyperthermia subsided in 24 hours, whilst leucocytosis lasted a day or two longer. Of 18 cases of dementia præcox, 4 recovered and 9 were considerably improved. Donath, in his communication referred to, states that he now employs a 10 per cent. of sodium nucleinate dissolved in 1 per cent. of sodium chloride. The dose of the drug ranges from 0·5 to 5·0 grammes, so that the largest bulk of fluid injected would be 50 c.c. Injections take place every 4 or 5 days, and 6 to 12 are given. Of 14 cases of dementia præcox thus treated, 3 were regarded as cured—they took up their work again, that is to say; 5 were improved. The cured and improved cases—taken together—reported by Donath and Lundvall respectively amounted to 57 per cent. and 72 per cent. These are remarkable figures compared with the ordinary ones, gathered from cases which have received no particular treatment. Recovery may be said to occur in from 13 per cent. to 20 per cent. of the katatonic group, which is the least unfavourable one. The latest figures are, I believe, those of H. Schmidt,[14] published in 1912, based upon the histories of 450 cases of dementia præcox discharged between 1901 and 1910. He found recovery in 16·2 per cent., in 15·5 per cent. recovery with defect. If the results of Donath and Lundvall are approached by other workers there will certainly be ground for the dictum of the former, that henceforth the passive attitude adopted towards cases of dementia præcox in respect of treatment is unjustifiable. In 1913 Moretti,[15] from his favourable experience with sodium nucleinate, thought the method justified in early cases. Cases such as those reported by Lépine and by Brown and Ross,[16] in which psychoses with indications of a toxic origin, such as mania-melancholia, acute confusional, and acute delirious conditions, have been cut short by injections of nucleinic acid, in some cases preceded by colloidal silver (and in all cases there was pronounced leucocytosis), show that the dogma that no measures can interrupt or modify the course of psychoses of this type is not correct.

Changes induced by Sodium Nucleinate.—Colloidal Metals.

In the absence of statements as to the qualitative cell count in cases which have received injections of sodium nucleinate it may be as well to mention that in the cases which I have injected, with from 50 c.c. to 100 c.c. of a 2 per cent. solution, the neutrophile cells showed a considerable proportional rise in number as a result of the injections. For the rest, there was always leucocytosis and increased pulse-rate; this was a more marked feature than rise in temperature or in the respiration rate. The changes noted passed off in a few days. I have found, in common with the observers quoted, that the effect produced on the temperature and respiration of the patient is negligible; there may be a rise of a degree or two in the former, but any such effect is very transient. Whereas the pulse-rate is notably increased, and this change, together with the leucocytosis, lasts a few days longer than any change in respect of temperature and pulse. The changes induced can be maintained for a considerable period by regular treatment, but the influence of the drug passes away in time. The favourable results which have been reported in disorders with a toxic origin as a result of the employment of colloidal metals (collargol, electrargol, leptynol—this last is the colloidal form of palladium) point to the desirability of using them in the same kinds of mental disorder as are favourably influenced by sodium nucleinate. I cannot here enter into the statements which have been made concerning the manner in which these colloidal preparations act (by promoting oxidation, especially); no sufficient evidence has been produced for them. But there is definite evidence that these substances produce a leucocytosis with increase in the neutrophile percentage, and a considerable increase in the opsonic power of the serum.

THE EFFECTS OF TUBERCULIN AND OTHER TREATMENT.

The attempts to promote the general powers of resistance in dementia paralytica, and to induce and prolong remissions by means of the injection of tuberculin, appear to have originated with the Viennese school, and have been mainly employed and advocated by Wagner von Jauregg and Pilcz. Although employed by the Viennese teachers and their pupils for more than 10 years, it cannot be said that any noteworthy publications have appeared from other sources; the method has not, in fact, been tested to any extent elsewhere. The dose of tuberculin commences at 0·01 mg., and is increased every second day by 0·02 mg., when reaction is weak or absent, by 0·05 mg. The maximum dose in most instances is 0·5 mg., but it has been as much as 1·0 mg. A febrile reaction of more than 39° C. is an indication that treatment should cease. No fever should be present on the day of injection. Both Wagner and Pilcz have drawn attention to the desirability of selecting early cases for treatment. The duration

of the disease in patients usually received into public institutions renders them unsuitable subjects. The chief publications of Wagner and Pilcz[17] known to me are mentioned in the bibliography; here I propose merely to refer to three groups of statistics, two of which are from the latter observer. The first deals with 66 cases of dementia paralytica treated as described, and 66 untreated ones. Of the former 20 and of the latter 39 died within the first year. At the close of four years 8 treated and 5 untreated were alive, the former in better mental and physical condition. In 1911 Pilcz published results in 86 cases, a considerable number of which were in quite an early stage of the disease; in 52 (60·32 per cent.) there was a favourable influence, of which 20 (23·2 per cent.) showed merely a quiescent condition; 9 (10·44 per cent.) marked remission lasting one to two years or more; and 23 (26·8 per cent.) got well to the extent that they resumed work (of whom 10 still remained at work two years later). Meyer,[18] in a publication appearing in 1912, gives the results of the Wagner-Pilcz treatment at the large Viennese asylum "am Steinhof." Of 112 cases of general paralysis 51 (45·5 per cent.) were uninfluenced, 22 (19·6 per cent.) showed slackening in the rate of progress of the disease, 28 (25 per cent.) marked remission, and 11 (9·9 per cent.) took up work again. From the combined statistics of Pilcz and Meyer it appears that from 35 per cent. to 36 per cent. of the cases treated passed into a remission of a marked kind. Statistics on the point are unknown to me, but I believe that this is a higher degree of frequency than what is observed in the untreated disease. Those with experience claim that improvements and remissions occur oftener and last longer in cases treated with tuberculin than in those who receive no treatment. The method is stated to be without danger in the absence of tuberculosis. According to Gulland and Goodall, in their work, "The Blood," injections of tuberculin are followed by an increased leucocyte count, there being an increase of neutrophiles and frequently also of lymphocytes. In certain cases under my care a relative lymphocytosis resulted from such injections, and I therefore suggested to Dr. D. L. Jackson, then assistant physician at Cardiff Mental Hospital, that he should observe the comparative white cell counts in cases of dementia paralytica who were receiving tuberculin. These were six in number, four receiving T.R. and two T.B.E. The dosage began with 0·0001 mg. in each case and was gradually increased to 0·01 mg. No changes occurred in the qualitative leucocytal counts until doses ranging from 0·0002 mg. to 0·001 mg. were employed; between these limits a lymphocytosis began to appear; the percentage of lymphocytes rose to as much as 50 in some of the cases. With the higher doses no more marked changes were found than when 0·001 mg. was given.

These results lead one to inquire whether the beneficial effect recorded as following upon the use of tuberculin in cases of dementia paralytica may be associated with the production of lymphocytosis, which would be an explanation based upon the observations recorded at the beginning of this lecture, with reference to the qualitative leucocytal count in states of remission and quiescence. This explanation would not account for improvement brought about by the use of sodium nucleinate. No relationship seems to exist between febrile reaction and the favourable results obtained with tuberculin; as with sodium nucleinate, so in this case, any increase of temperature produced is very slight.

Recently mercury or salvarsan has been used in combination with sodium nucleinate or tuberculin. Whilst a higher degree of leucocytosis is obtainable in this way there is the possibility that the resulting benefit is due to the direct action of these drugs rather than to leucocytal action, the cases treated being in reality not cases of dementia paralytica but of cerebral lues in the usual sense. But Pilcz,[19] at the Congress of Neurology and Psychiatry held at Ghent last year, stated that remissions of much more marked and prolonged kind are obtainable in undoubted general paralysis by this means than occur spontaneously, and that they occur in the most unfavourable type of case, and occur repeatedly on repeated injection. Other methods, which are also methods whereby leucocytosis is promoted, such as the inoculation of dead cultures of staphylococcus and streptococcus, are now being tried in dementia paralytica. Marked remissions are noted after infections in which staphylococci more especially are concerned. Wagner[20] has recently obtained striking remissions in seven cases of this disease, of the maniacal type, by the use of polyvalent staphylococcal vaccine. Here, again, the temperature was but slightly affected, whereas the increase in the pulse-rate was marked.

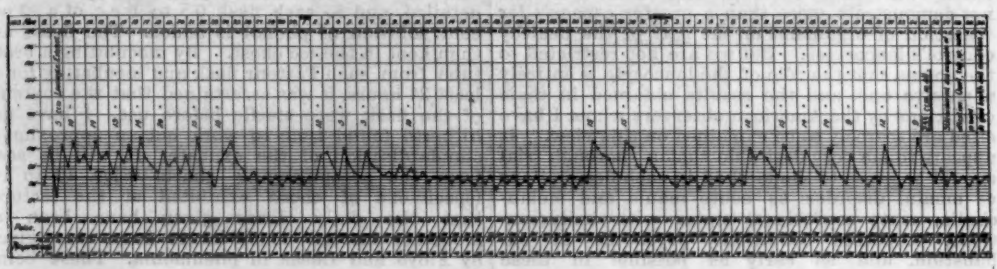
LEUCOCYTE EXTRACT.

In 1908 Hiss[21] published observations upon the curative influence of extracts of leucocytes upon infections in animals. These observations were followed by others, developing out of them, by the same and other workers. In the bibliography I give the references to this work, and must content myself with a brief account of the principles upon which it was based, the application of these in practice, and the results. Hiss[21] discusses the hypotheses and facts of immunity, and advances the reasons which support the belief that leucocytes play a dominant part in the protection of the animal economy.

Proceeding upon the hypothesis that "substances—digestive, poison-neutralising, complementary—might possibly be liberated from leucocytes by methods of extraction and introduced in this free condition into infected animals or man," he experimented upon animals (rabbits) in which certain prevalent infections had been produced by inoculation with organisms (staphylo- and streptococci, pneumococci, meningococci (typhoid)), so that they suffered from severe septicæmia or toxæmia. These received extract of leucocytes prepared from normal or immunised rabbits, with the result that they survived infections rapidly fatal to control animals; the beneficial effect of this treatment was apparent by such indications as fall in temperature and gain in weight. The exact action of the extracted substance is a matter of conjecture. Zinsser[22] has shown that the extract contains bactericidal substances in insignificant amount compared to the serum, and contains no complement. Hiss and Zinsser, in a subsequent communication in the same periodical, give reasons for ascribing the favourable influence of the procedure adopted to a "faculty of neutralisation towards toxic-bacterial products possessed by the extract." This explanation is borne out by observations by them upon the treatment as applied to infections in man. The beneficial results observed in epidemic meningitis—

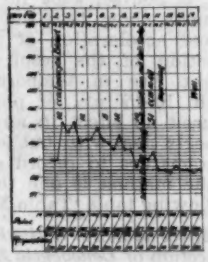
especially the promptitude of the reduction of such symptoms as vomiting, delirium, stupor, and reduction of temperature—are most reasonably explained upon the theory of neutralisation of toxin. The like holds good for the favourable results obtained in lobar pneumonia. Hiss and Zinsser, in the same periodical, report upon these. Floyd and Lucas[23] follow in a later number with a larger series of cases of this disease. They approximately standardised the extract, so that about 20,000,000 leucocytes were given in 10 c.c. of water. About 10 c.c. injected subcutaneously twice daily was their ordinary dose, but in severe cases as much as 20 c.c. were given three or four times in the 24 hours. They found that no harm was done by the extract, whilst in a number of cases the disease was apparently shortened. Noticeable improvement in the symptoms and in the comfort of the patient was seen. Toxæmia was notably lessened. Up to the date of these observations there was not sufficient material upon which to study case-mortality in cases treated with the extract and in cases untreated. The latest paper on this subject which has come to my notice is one by Hiss,[24] published in 1913, in which he confirms the utility of leucocytic extract in the control of infectious disease, whether general or local, and given reasons for the view that the beneficial results obtained are due, not to a bactericidal or phagocytic action of the leucocytes employed, but rather to a poison-neutralising or poison-prohibiting action.

FIG. 10.



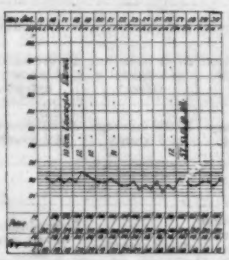
Acute mania; fairly good condition. R. B., aged 22, admitted Nov. 6th, 1913. (The lettering on the chart shows the administration of c.c. leucocyte extract, 253 c.c. in all, being reached on Jan. 25th, 1914. By Jan. 27th, though still incoherent and incapable of attention, he was quiet and working in the ward. On Jan. 30th he was in good health and condition.) (The figures and lettering are clear under a hand lens.)

FIG. 11.



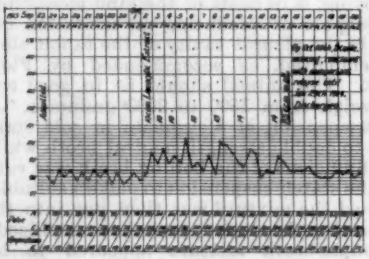
Acute confusional case; marked hallucinations. R. B., aged 32, admitted Jan. 28th, 1914.

FIG. 12.



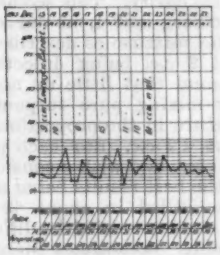
Melancholia. A. S., aged 26, admitted Sept. 12th, 1913. (The patient's physical reduction on admission was marked. The chart ends on Oct. 30th. By Nov. 10th he was working and was discharged on Nov. 27th, 1913.)

FIG. 13.



Acute delusions; agitation; physical reduction marked. E. W., aged 22, admitted Sept. 23rd, 1913.

FIG. 14.



Acute confusion. S. P., aged 26, admitted Dec. 9th, 1913. (The patient's physical reduction on admission was marked. By January, 1914, he was working, and at the close of the month was awaiting discharge.)

Employment of Leucocyte Extract in Mental Cases.

The perusal of the beneficial effects produced in acute infective diseases by the early administration of leucocytic extract—and I have to thank my

colleague, Dr. Schölberg, for bringing this literature to my notice—suggested the application of this treatment in cases of acute and recent insanity, similar to those in which sodium nucleinate and like drugs have been employed. In this connexion I would allude to the observations recorded in the second lecture, which showed that for some unknown reason a higher opsonic index was found in respect of two organisms (intestinal anaërobes) when the patient's leucocytes were replaced by those of a healthy control. This observation does not demonstrate more than a greater capacity for ingestion of organisms on the part of the healthy control's leucocytes. But we are not restricted to the dogma that the rôle of the leucocyte is entirely a passive one, and the results obtained in toxic conditions by the American observers whom I have cited are scarcely to be explained on this view. It appears to me very desirable that a thorough trial should be given to the method in such descriptions of mental disorder as acute mania and melancholia, acute confusional states with hallucinations, stuporose conditions, psychoses of exhaustion, and as early as possible in these conditions.

For the past two years I have given considerable attention to the preparation of leucocytic extract upon the basis of the American work recorded, and of late I have been able to obtain it in sufficient quantities for use, and have employed, and am employing, it in cases of the kind mentioned. For the purpose of producing an exudation of leucocytes in the pleural cavity of the rabbit aleuronate was employed, as recommended by Floyd and Lucas. The animal should be in good condition and weigh from 1600 to 2000 grammes. A 5 per cent. suspension of aleuronate in cold starch was added to double-strength neutral broth whilst boiling. Sufficient of the boiling broth was rubbed up with the starch suspension to make a suitable emulsion, and the mixture was then put into the boiling broth; the latter was then sterilised. The aleuronate-broth mixture appeared to lose its potency at the end of two to three months, and a fresh supply was made. Floyd and Lucas were able to obtain an exudate in 24 hours by injection of this mixture to the amount of 10 c.c. into each pleural cavity. This seems an enormous amount. Schölberg and I, in our earlier experiments, used the mixture as described, but in less amount, about 2 c.c. being injected into each cavity. We found that little or no exudate was produced. By mixing pure turpentine with the aleuronate mixture in the proportion of 1 to 4, and injecting about 1·2 c.c. into each pleural cavity, we obtained an exudate with a considerable degree of regularity, the best results being achieved when the rabbit was killed in about 48 hours. The nature of the exudate varied in different animals, as also its amount. Sometimes there was a serous effusion comparatively deficient in leucocytes, sometimes a very turbid exudate, quickly becoming semi-gelatinous in a tube; and the amounts obtained from individual rabbits varied from 10 to 60 or more c.c.

The technique of collection which I employ is as follows. The animal is killed by chloroform, stretched and tied supine, its thorax and the abdomen adjoining shaved, the flesh thoroughly seared. The pleural cavity on each side is then cut open with sterile scissors, and the exudate drawn up in sterile 10 c.c. pipettes and placed in sterile 10 c.c. centrifugal tubes, 5 c.c. in each tube; to each tube sterile citrate is added, allowing sufficient room for fitting a sterile rubber cork. Each tube is well shaken, and the tubes are then centrifugalised for half an hour. The supernatant fluid is then pipetted off, and sterile salt solution (0·85 per cent.) added to the deposit of corpuscles. The tubes are well shaken and placed in the incubator at 37° C. for 24 hours. The contents are then transferred to sterile Pasteur flasks, not more than 10 c.c. to each flask, to minimise the loss in case of contamination during the proceedings detailed, and to each flask 0·5 to 1 c.c. of a 10 per cent. solution of phenol is added. The flasks are then kept in the ice chest. By inoculating a broth tube from each Pasteur flask and incubating for at least 24 hours, it was ascertained that the contents of the flask were sterile before use. I have not hitherto found time to work out an approximate standardisation of the exudate. It will be seen from the accompanying charts (Figs. 10 to 14) (specimens of those exhibited at the lecture) that the daily doses given have been of moderate amount; much larger doses were given by Floyd and Lucas in pneumonia. These being the first cases I have dealt with I restricted the dose, but should not do so in future cases. The injections were made subcutaneously between the scapulæ. Out of some 80 injections, averaging about 8 c.c. of extract to each, not one was attended with any untoward result. The patients were, of course, kept in bed the whole time. The charts show that the injections produced a marked acceleration of pulse-rate, very slight acceleration of the respiratory rate, and usually a slight rise in temperature. Control injections with 10–15 c.c. of physiological salt solution produced no effect in any of these directions. The charts deal with but few patients, and it would be premature to record any therapeutic results; but the method is one to be persevered with. The following table (Table XIV.) shows that

TABLE XIV.—*Effect upon the White Blood Cell Count of Injection of Leucocytic Extract.*

The total of each count is the average of the figures per c.mm. deduced from reckoning three sets of 400 squares each. The percentage of polymorphs is based upon 400 cells for each count.

—	Leucocytes per c.mm.		Percentage of polymorphs.	
	Before injection of leucocytic extract.	After injection of leucocytic extract.	Before injection of leucocytic extract.	After injection of leucocytic extract.
B. W.	13,400 (average of 2 counts).	15,866 (average of 3 counts).	63·50 (average of 2 counts).	73·3 (average of 3 counts).
	Controls.			
—	Before injection of 0·86 per cent. salt solution in equal bulk.	After injection of salt solution.	Before injection of salt solution.	After injection of salt solution.
S.	7500 (average of 2 counts).	7500 (average of 2 counts).	65·62 (average of 2 counts).	67·75 (average of 2 counts).
H.	15,266 (average of 3 counts).	12,066 (average of 3 counts).	61·00 (average of 3 counts).	64·50 (average of 3 counts).

an absolute and relative polynucleosis is produced by the injection of leucocytic extract. [Only one case—B. W.—is given here for reasons of space.]

THE PRECIPITIN TEST IN THE PSYCHOSES.

The discovery of precipitin is based upon researches into the problems of immunity, and

is due primarily to the work of R. Kraus. It has been shown that the serum of an animal which has been repeatedly injected with serum from another animal of a different kind gives a precipitate when brought into contact with the serum used for injection or with that of an allied animal in certain proportions. Thus, the serum of rabbits which have been so injected with human blood-serum gives a precipitate with such serum, and with the serum of apes, but not with other serum. Similar "related reactions" exist in other instances; thus "antiserum" from a fowl gives precipitate with pigeon's serum; from a horse with donkey's or tapir's; from a fox with dog's serum. As you are aware, this reaction has been extensively employed for forensic purposes, especially by Uhlenhuth. The precipitin reaction does not seem to have been widely tested in respect of its efficiency as a diagnostic agent in disease. Uhlenhuth and Weidanz in their work upon the formation of precipitin and the precipitin test refer to an experiment by Kullmann, who immunised rabbits with extract of carcinoma, and thus obtained a precipitating serum, which, however, gave no specific reaction with the serum of patients affected by carcinoma, a precipitate being likewise obtained by adding it to the serum of cases of nephritis or of healthy persons. As far as carcinoma is concerned, it has been shown by Romkes, whom the above-mentioned authors cite, that when all normally precipitable substances have been thrown down from the serum of the cancer patient by the addition of serum from a rabbit previously treated with normal human serum, no further precipitate is obtainable by adding anti-serum from a rabbit injected with cancer emulsion. In other words, the precipitate formed with the carcinomatous serum on addition of its antiserum is not specific but is the same in nature and quantity as that formed with the same serum on addition of normal rabbit antiserum. The question as to whether specific precipitins can be produced by inoculating rabbits with serum from different kinds of insanity has received no attention, as far as I am aware, except from Geissler.[25] He states that the rabbit antiserum of cases of the katatonic variety of dementia præcox gave a precipitate in greater amount and in higher dilutions with the serum of katatonic cases than with that of a healthy sane control. The same applied to cases of the hebephrenic variety, and in both instances to all cases and not merely to individual ones. The observation did not hold good with the paranoidal form of the disease. The antisera in question gave no precipitate with the sera of general paralytics, epileptics, senile dements, neurasthenics, and others. If Geissler's observation is correct, a specific precipitin reaction occurs in the two chief varieties of dementia præcox. Ceni[26] found that the precipitating properties of epileptic serum did not differ from those of normal serum. Besta,[27] experimenting with pellagra serum, found no specificity of reaction.

In the absence of anything approaching adequate information, it seemed desirable to experiment with the blood of certain of the insane with a view to determining whether specific precipitins could be produced by inoculation of rabbits, and for this purpose Schölberg and I selected cases of dementia paralytica and dementia præcox; the former presenting well-marked symptoms of the second stage, the latter in an active stage of the disease. Blood was received from an arm vein through a sterile cannula into a sterile bottle, and the serum allowed to separate. Rabbits were inoculated intravenously, in accordance with the practice recommended by Uhlenhuth and Weidanz, at intervals of seven days with from 2·5 to 3·0 c.c. of the serum. Seven days after the third injection, and before each subsequent injection, about 3·0 c.c. of blood was removed from the dorsal vein of the ear, centrifugalised, and 0·1 c.c. of the serum added to 1 c.c. of a dilution of 1 in 1000 (salt solution) of the freshly obtained serum of the patient whose blood was to be tested. The antiserum was thus tested on the seventh day after each injection—that is, about the time at which, according to Uhlenhuth and Beumer, the production of precipitin in the rabbit's blood is most active. We found that when a precipitate was about to be formed the clear fluid of the tube concerned showed a characteristic cloudiness within a quarter of an hour, but flocculi took longer to appear; and it was from one to three and a half hours before the actual precipitate was apparent. The animal furnishing the precipitin was immediately killed under chloroform, the blood allowed to collect and clot in a sterile bottle, the serum filtered through a porcelain filter and received direct into ampoules, which were sealed as filled. This filtration and collection was kindly carried out by Dr. Stanford, research chemist, Cardiff Mental Hospital. Our results may be tabulated in Table XV.

TABLE XV.—*Particulars in respect to Production of Precipitin, with Results.*

Patient and disease.	Number of rabbits used.	Number in which precipitin obtained.	Amount of serum injected before precipitin formed.	Amount of serum in cases failing to yield precipitin.	Amount of cerebro-spinal fluid with like failure.	Remarks.
			c.c.	c.c.	c.c.	
M. J. D. G.P.I.	8	1 1:500)	12·5	15-27·5	—	In one case 21 c.c. serum and 19 c.c. cerebro-spinal fluid injected; no precipitin.
F. M. G.P.I.	3	1 (1:1000)	8·0	—	13-19·5	—
C. T. G.P.I.	8	0 ,,	—	15-23·5	15-17	—
M. J. G.P.I.	7	3 ,,	9·0 19·0 *26·5	17-20	13·0	*Only slight precipitin in this case.
F. L. Mel.Stupor.	2	1 ,,	*16·5	15·5	—	* Ditto.
J. H. G.P.I.	6	1 ,,	8·5	11-24	—	—
H. R. G.P.I.	5	0 ,,	—	16-24	—	—
W. B. G.P.I.	14	0 ,,	—	10-42	—	—
J. W. G.P.I.	12	2 ,,	16·0 8·0	8-27	—	—
M. R. (Dem.præcox).	7	*1 ,,	8·0	11-21·5	—	*A gain of 70 grm. in this case.
C. M. (Dem.præcox).	11	0 ,,	—	8-33·5	—	—
H. (Dem.præcox).	6	0 ,,	—	5·5-21·5	—	—
B. (Dem.præcox).	5	0 ,,	—	10·5-27·0	—	—
—	94	10 ,,	—	—	—	—

The first point shown by Table XV. is the small percentage of instances in which a precipitin was

TABLE XVI.—*Particulars in Respect to Production of a Precipitate in the Diluted Serum (unless otherwise stated) with Rabbit Antiserum in Various Kinds of Insanity.*

No.	Patient and disease.	Degree of dilution of patient's serum. 1/100	1/500	1/1000	1/10,000	1/20,000	Anti-serum used.
	21/1/1913						
3	F. M., Gen. par., homologous.	—	—	+	—	—	F.M.
4	T. I., Epil. dem.	—	—	+	—	—	,,
5	F. H., Gen. par.	—	—	+	—	—	,,
6	D. L., Control.	—	—	+	—	—	,,
7	D., Sane; florid syph.	—	—	+	—	—	,,
8	D-y., Sane; florid syph.	—	—	+	—	—	,,
9	Tr., Epil. dem.	—	—	+	—	—	,,
10	C. B., Gen. par.	—	—	Trace	—	—	,,
11	L., Imbecile.	—	—	,,	—	—	,,
12	M., Epil. imbecile.	—	—	,,	—	—	,,
13	B. L., Gen. par.	—	—	,,	—	—	,,
	20/3/1913						
14	M. J., Gen. par., homologous serum.	—	—	+	++ (½ to 1 hour).	—	M.J. Rabbit K.
15	C. J., Gen. par.	—	—	+	—	—	,,
16	B. P., Ac. mania.	—	—	+	+	—	,,
17	H., Subacute mania.	—	—	+	+	—	,,
18	E. S., Gen. par.	—	—	+	+ (20 to 24 hrs.)	—	,,
19	M., Gen. par. in seizures.	—	—	+	+ (20 to 24 hrs.)	—	,,
20	V., Dem. præcox.	—	—	+	+ (20 to 24 hrs.)	—	,,
	30/3/13						
21	M. J., Gen. Par. (same as 14).	—	—	+++	++	—	,,
22	L., Gen. par.	—	—	—	+	—	,,
23	H., ,, ,,	—	—	—	+	—	,,
24	A., Dem. præcox.	—	—	—	+	—	,,
25	C. T., ,, ,,	—	—	—	+	—	,,
26	C., Acute melan.	—	—	—	+	—	,,
27	R., ,, ,,	—	—	—	+	—	,,
28	D., ,, ,,	—	—	—	+	—	,,
	6/4/13						
29	M. J., Gen. par. (same as 14).	—	—	—	+++	—	,,
30	Dem. præcox.	—	—	—	++	—	,,
31	I., Melan.	—	—	—	++	—	,,
32	E. J., Gen. par.	—	—	—	+	—	,,
33	W. B., ,, ,,	—	—	—	+	—	,,
34	H. R., ,, ,,	—	—	—	+	—	,,
35	J. J., ,, ,,	—	—	—	+	—	,,
36	L., Delusional.	—	—	—	++	—	,,
37	F. H., Gen. par.	—	—	—	+	—	,,
38	N. A., Melan.	—	—	—	+	—	,,
	18/4/13						
38a	M. J., Gen. par. (same as 14).	—	—	—	+	—	,,
39	C. H. B., Gen. par.	—	—	—	+	—	,,
40	H. J., Ditto with tabes.	—	—	—	+	—	,,
41	J. F., delusional.	—	—	—	+	—	,,
42	D. L., Dissem. scler.	—	—	—	+	—	,,
43	B. L., Gen. par.	—	—	—	+	—	,,
44	W. O., Imbecility.	—	—	—	+	—	,,
45	P., Delus. alcoholism.	—	—	—	+++	—	,,
46	I., Epil. imbecile.	—	—	—	+	—	,,
	7/6/13						
47	J. W., Gen. par.	—	—	+	—	—	,,

TABLE XVI.—(*Continued.*)

No.	Patient and disease.	Degree of dilution of patient's serum. 1/100	1/500	1/1000	1/10,000	1/20,000	Anti-serum used.
48	W. R., Epil. dem.	—	—	+	—	—	M.J. Rabbit K.
49	W. B., Dem. præcox.	—	—	+	—	—	,,
	1/4/13						
50	J. W., Gen. par., remission.	0	—	—	—	—	,,
60	J. S. K., Gen. par., remission.	0	—	—	—	—	,,
	7/4/13						
61	Y., Gen. par., remission.	0	—	—	—	—	,,
	22/4/13						
62	J. H., Gen. par. (homologous).	—	—	—	++	+	J.H. Rabbit 7.
63	F. H., Gen. par.	—	—	—	+	++	,,
64	C., Chr. dem. præcox.	—	—	—	+	+	,,
	23/4/13						
65	S., Gen. par.	—	—	—	—	+	,,
66	C. T., ,, ,,	—	—	—	—	Slight.	,,
67	L. ,, ,,	—	—	—	—	+	,,
68	A., Chr. dem. præcox.	—	—	—	—	+	,,
69	V., Chr. dem. præcox.	—	—	—	—	+	,,
70	M. J., Gen. par.	—	—	—	—	+	,,
71	B. P., Ac. mania.	—	—	—	—	+	,,
72	M., Gen. par.	—	—	—	—	+	,,
73	C. T., Chr. dem. præcox.	—	—	—	—	+	,,
74	W. R., Chr. melan.	—	—	—	—	+	,,
75	E. D., ,, ,,	—	—	—	—	+	,,
76	E. C., Chr. dem. præcox.	—	—	—	—	+	,,
77	E. J., Gen. par.	—	—	—	—	+	,,
78	W. B., ,, ,,	—	—	—	—	+	,,
79	W. R., ,, ,,	—	—	—	—	+	,,
80	J. J., ,, ,,	—	—	—	—	+	,,
81	L., Delusional.	—	—	—	—	+	,,
82	C., Imbecility.	—	—	—	—	+	,,
83	I., Epil. imbecility.	—	—	—	—	+	,,
84	J. F., Delusional.	—	—	—	—	+	,,
	8/5/13						
97	J. H., Gen. par. (No. 62).	—	C.S.F. trace.	—	—	Pure C.S.F. ++	,,
98	L., Imbecile.	—	,,	—	—	+++	,,
99	H. R., Gen. par.	—	,,	—	—	+++	,,
100	C. R., ,, ,,	—	,,	—	—	+++	,,
101	E. L., ,, ,,	—	,,	—	—	++	,,
102	M., ,, ,,	—	,,	—	—	+++	,,
103	B., Delusional.	—	,,	—	—	+++	,,
104	Salt solution (control).	—	—	—	—	0	,,
	16/7/13						
137	A. W., Subacute dem. præcox.	++	—	++	—	—	Rabbit 3 of M.R.
138	R., Epil. dem.	—	—	++	—	—	,,
139	W., Gen. par.	—	—	++	—	—	,,
140	R., Chr. dem. præcox.	—	—	++	—	—	,,
141	T., Chr. dem. præcox.	—	—	++	—	—	,,
142	A. D., Acute melan.	—	—	++	—	—	,,
143	V., Chr. dem. præcox.	—	—	++	—	—	,,
144	F. W., Acute mania.	—	—	++	—	—	,,
145	H., Senile dem.	++	—	++	—	—	,,

TABLE XVI.—(*Continued.*)

No.	Patient and disease.	Degree of dilution of patient's serum.					Anti-serum used.
		1/100	1/500	1/1000	1/10,000	1/20,000	
	13/8/13.						
146	J. W., Gen. par.	—	—	+	—	—	Rabbit 2 of M.R.
147	W. B., Acute dem. præcox.	—	—	+	—	—	,,
148	M. R., Chr. dem. præcox (homologous).	—	—	+	—	—	,,
149	M. S., Chr. dem. præcox (homologous).	—	—	+	—	—	,,
150	M., Chr. melan.	—	—	+	—	—	,,
151	J. M., Chr. delusional.	—	—	+	—	—	,,
	1/8/13.						
152	J. W., Gen. par. (homologous).	++	—	++	—	—	Rabbit U of J.W.
153	M. R., Chr. dem. præcox.	++	—	+	—	—	,,
154	A. P., Rec. delusional.	++	—	+	—	—	,,
155	H., Senile dem.	++	—	+	—	—	,,
156	W. B., Gen. par.	++	—	++	—	—	,,
157	L. M., Subacute mania.	++	—	++	—	—	,,
158	A. H., Rec. melan.	++	—	+	—	—	,,
159	W. R., Chr. melan.	—	—	+	—	—	,,
160	T., Chr. dem. præcox.	—	—	+	—	—	,,
161	M. W., Acute mania	—	—	++	—	—	,,
162	E. W., Epil. dem.	++	—	+	—	—	,,

Remarks.—No. 3.—0·2 c.c. antiserum. Nos. 3 to 8.—Equal also results in all cases from No. 3 to No. 8 inclusive with antiserum obtained from a healthy person. Nos. 59, 60, and 61.—C.S.F. used instead of serum in these three. No. 102.—Remission.

The amount of precipitate, estimated by the eye, recorded as "trace," "+," "++," "+++."

C.S.F. = Cerebro-spinal fluid.

formed—10·6 per cent., or in 10 out of 94 instances. This illustrates the difficulty one meets with in the attempt to obtain information about precipitins; their production is most tedious and capricious, and not subject to control; dependent, in fact, upon individual qualities of the animals employed, of which one knows nothing. Fully grown rabbits, well nourished, weighing from 1800 to 2000 grammes, should be employed. It is seen that a precipitin was mostly obtained after injection of from 8 to 12·5 c.c. of serum, and that when the latter amount is exceeded the prospect of obtaining precipitin is small; in fact, it is not worth while to continue with the injections when no result is obtained with, say, 15 c.c. The loss of weight shown in individual instances was very considerable in the majority of the rabbits, and of 89 in which the weight was taken weekly during the inoculations, 73, or 82 per cent., lost weight. A table omitted for reasons of space shows the losses and gains in weight in those animals in which a precipitin resulted and in those in which it did not. Whereas only 1 out of 10 of the former class (10 per cent.) showed a gain in weight, 15 out of 79 of the latter (19 per cent.) showed such. I now produce portions from a table showing the results obtained by the addition of rabbits' antisera to the diluted sera of various kinds of insanity. (Table XVI.)

The points brought out in the complete table are these: seven antisera, from rabbits inoculated with serum from cases of dementia paralytica and dementia præcox, were employed against the sera of 173 patients in dilutions varying from 1 : 100 to 1 : 20,000. These patients illustrated many kinds of insanity—two exceptional cases (Nos. 7 and 8) were those of sane persons with florid syphilis, for trial with antiserum from a general paralytic. Each antiserum was put against the serum of the patient by the injection of which it resulted, also against that of patients with the same disease, and against sera of patients with other kinds of insanity. The results were estimated by naked-eye observation. (Uhlenhuth's special tubes were used throughout.) From these it is to be gathered that a given antiserum produces the same amount of precipitate, whether it be put against the actual serum by which it was produced, the serum of patients suffering from the same disease, or the serum of patients suffering from other kinds of insanity. And this obtains for the various dilutions employed. In cases Nos. 3 to 8 inclusive equal results were obtained (in the different conditions mentioned) with antiserum from a general paralytic and from a healthy person. In ten cases antiserum from a general paralytic was put against cerebro-spinal fluid from general paralytics, an imbecile, and a case of delusional insanity, in a dilution of 1 : 500. Either no precipitate or a mere trace resulted and without distinction as regards amount. With the pure cerebro-spinal fluid abundant precipitate resulted, but again without distinction. Evidently the reacting body is much less in amount in this fluid than in the serum.

Another way in which the question can be decided, as to whether additional or specific substances (precipitins) are produced in rabbit's serum by the injection of the serum of persons suffering from disease, over and above the normally resulting precipitin, is as follows: (*a*) the serum of the diseased person is first saturated with "normal" antiserum (i.e., serum from a rabbit inoculated from a healthy person); (*b*) the rabbit's antiserum which has been produced by inoculation from such diseased person is in like manner saturated with "normal" serum (i.e., serum from a healthy person), the precipitates which result are filtered off; and (*c*) the filtrates are brought together. This appears to be theoretically sound, but in practice I found in respect to (*b*) as follows (Table XVII.):—

TABLE XVII.

Normal person's serum.	Against rabbit antiserum "W" from a general paralytic.	Result.
Pure. 0·1 c.c.	1 : 500 / 1·5 c.c.	No precipitate; slight opalescence.
,,	Against rabbit antiserum from a normal person. (As control) 1 : 500 / 1·5 c.c.	,,

The experiment was repeated, using 0·2 c.c. of the normal person's serum and 2 c.c. of the antiserum of the two rabbits; the result was the same. So that I was unable to proceed on the theoretical lines mentioned, but had to content myself with carrying out (*a*) of the above, filtering and adding the "psychosis antiserum" without prior treatment, with the results which are shown in Table XVIII.

TABLE XVIII.—*Added to 3 c.c. of Dilution 1 : 1000 of Serum.*

"Normal" rabbit antiserum, titre 1/20,000.	H. Dem. præcox.	K. G.P.I.	Bl. Dem. præcox.	Bd. G.P.I.	P. Chr. mania.	Br. Epil. dem.	Remarks.
0·2 c.c. pure.	+	+	+	+	+	+	Same in all.
0·2 c.c. "	+l.	+l.	+l.	+l.	+l.	+l.	"
0·2 c.c. "	sl.+	sl.+	sl.+	sl.+	sl.+	sl.+	"
0·1 c.c. "	"	"	"	"	"	"	"
0·1 c.c. "	v.f.+	v.f.+	v.f.+	v.f.+	v.f.+	v.f.+	
Precipitate filtered in all of the above.							
"Psychosis antiserum" W., from a G.P.I. added 0·2 c.c.	—	—	—	—	—	—	—

l. = Less. sl. = Slight. v.f. = Very faint.

The inferences to be drawn from the results shown in Tables XVI. and XVIII. are that specific precipitins are not obtained by the inoculation of rabbits with the serum of insane persons; that all precipitable substance in such serum is brought down by the precipitin present in "normal" rabbit antiserum, so that no further result is obtained when antiserum from a case of insanity is subsequently added. These being the results I obtained, it remains for me to mention that Geissler, in cases of the hebephrenic and katatonic varieties of dementia præcox, obtained, by the filtration method alluded to, a precipitate over and above the normal one, and which, therefore, was specific; at least, so I understand his account. This was in 1910. Geissler's results have not been confirmed that I am aware of, and it is highly probable his work has not been repeated, having regard to the difficulties in the way of such work.

TABLE XIX.—*Complement Deviation with Sera of the Insane (Rabbit Antiserum as "Antigen") Hæmolysis + or 0.*

Antigen, serum from rabbit.	R. Dementia præcox.				B. Dementia præcox.				W. G.P.I.				M. Delusional.				P. Acute mania.				M. Acute mania.			
	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,300,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000
(1) R 2 (from a case of dem. præcox). 1 in 20.	00	0	s.r.	+	00	0	+	+	00	0	s.r.	s.r.	00	0	r.	r.	00	0	s.r.	+	00	r.	s.r.	+
	(The provocative serum for R 2.)																							
(2) U (from a case of dem. para.). 1 in 10.	0	+	+	+	00	+	+	+	00	+	v.s.r.	+	00	v.s.r.	+	+	00	v.s.r.	+	+	00	v.s.r.	+	+
									(The provocative serum for U.)															
(3) Normal rabbit. 1 in 40.	+	+	+	+	+	+	+	+	+	+	s.r.	+	+	+	+	+	+	+	+	+	+	+	+	+
Controls without antigen.	+	—	—	—	+	—	—	—	+	—	—	—	+	—	—	—	+	—	—	—	+	—	—	—

Antigen, serum from rabbit.	M. Delusional insanity.				M. Mania.				S. Dementia.				R. Dementia præcox.				B. Dementia præcox.				W. G.P.I.			
	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,00	0 1/10	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000
(1) U (from a case of dem. para.). (1 in 5.)	00	0	r.	0	00	00	r.	s.r.	00	00	r.	s.r.	00	00	m.r.	s.r.	00	00	s.h.	s.r.	00	00	v.s.r.	s.r.
																					(The provocative serum for U.)			
(2) R 2 (from a case of dem. præcox). (1 in 5.)	—	00	00	v.s.h.	00	00	00	s.h.	00	00	00	s.h.	00	00	00	00	00	00	v.s.h.	v.s.h.	00	00	00	s.r.
													(The provocative serum for R 2.)											
(3) Normal rabbit. (1 in 10.)	—	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Controls (without antigen).	—	+	—	—	—	+	—	—	—	—	+	—	—	—	+	—	—	+	—	—	+	—	—	—

Antigen, serum from rabbit.	H. G.P.I.					B. Dementia præcox.					P. Dementia præcox.					T. Acute mania.				
	1/10,000	1/100,000	1/1,000,000	1,10,000,000	1/100,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/100,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/100,000,000	1/10,000	1,100,000	1/1,000,000	1/10,000,000	1/100,000,000
(1) W (from a case of dem. para.). 1 in 30.	0	0	0	0	0a.c.	0	0	0	v.s.r.	s.r.	0	0	0	0	0	0	0	s.r.	s.r.	s.r.
(2) Normal rabbit. 1 in 10.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
(3) Controls.	—	+	+	0	+	—	+	+	+	+	—	+	+	+	+	—	+	+	+	+

00 = Total and complete deposition of red corpuscles. r. = Retarded. s.r. = Slight retardation. v.s.r. = Very slight retardation.
m.r. = Much retarded. p.h. = Partial hæmolysis. s.h. = Some hæmolysis. v.s.h. = Very slight hæmolysis. a.c. = Almost complete.

DEVIATION OF COMPLEMENT EXPERIMENTS.

We determined in the next place to experiment with a view to ascertaining whether, by the method of complement deviation, any specificity of reaction between a rabbit antiserum and the serum of the case of insanity by which it was produced, and allied sera, could be found. Such a test is much more delicate than a precipitin reaction. For the purpose of this test the rabbit antiserum was, for convenience, regarded as the "antigen," the patient's serum as the "amboceptor." Guinea-pig's complement was used, and the usual hæmolytic serum, sensitised to sheep's corpuscles. The titre of the "antigen," complement, and hæmolytic serum was ascertained, as for the Wassermann test. As a control "antigen" the serum of a normal uninjected rabbit was employed. A further control was instituted, as in the Wassermann test, by omitting "antigen" in one or more tubes in the case of each of the sera tested. The complement was of course destroyed in the case of all the sera, whether of rabbit or of patient. After a considerable number of preliminary experiments three sets of reliable results (with three antisera) were obtained, and these I show in Table XIX.

The extraordinary delicacy of this test is apparent, especially from the last case in the table, which shows complement deviation in two instances with dilutions of 1:100 million. There is, however, no specific complement deviation with the highest dilutions of the patient's serum, so that the test will not serve for purposes of differentiation. But here again the results recorded by Geissler are out of accord with those I record, inasmuch as he obtained deviation of complement of a specific kind in the case of serum of the hebephrenic and katatonic varieties of dementia præcox.

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SURGICAL AID SOCIETY.—The Lord Mayor of London presided last week over the annual general meeting of supporters of the Surgical Aid Society at the Mansion House. He stated that the society during its 50 years' work had distributed 856,696 appliances. A vote of thanks was passed to Sir Frederick Treves, who has resigned the post of honorary consulting surgeon.

A METHOD OF TREATING THE SAC IN THE RADICAL CURE OF FEMORAL HERNIA.

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THE following method of dealing with the sac of a femoral hernia is so simple, in my opinion so efficient, and so completely obliterates the sac, the obliteration of which is the most essential step in any operation aiming at a radical cure, that I feel I need offer no excuse for describing the operation in detail, especially as, so far as my reading of surgical literature goes, I have not seen this method described. During the last three years I have performed this operation some 30 times. I have no statistics to offer, but the fact that no patient has returned to me with a recurrence is significant. In cases which I have had an opportunity of examining some time after the operation I have been very satisfied with the apparent efficiency of the cure.

FIG. 1.

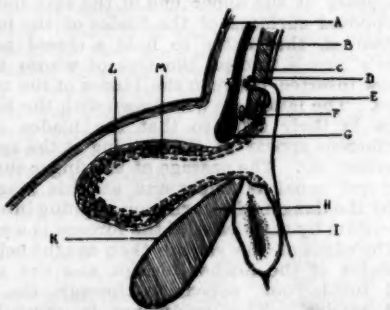


Diagram showing sagittal section through crural canal and femoral hernial sac, and demonstrating the sac before and after invagination. A, Skin. B, Aponeurosis of external oblique. C, Internal oblique and transversalis conjoined. D, Parietal peritoneum. E, Invaginated sac ligatured and fixed. F, Spermatic cord. G, Poupart's ligament. H, Pectineus muscle. I, Horizontal ramus of pubis just external to symphysis. K, Pectineal fascia. L, Fatty covering of peritoneal sac. M, Sac *in situ* before invagination.

My method of procedure is as follows:—

1. The skin incision is made, commencing about 1½ inches above the inner end of Poupart's ligament and vertically above the crural canal, extending down to 1½ inches below the external opening of the canal and having a slight convexity outwards. I prefer the external convexity in that it gives more room and removes the suture line further from the genital organs than does the ordinary straight vertical incision.

2. The hernial sac, covered by its layer of properitoneal fat, is exposed and thoroughly separated as far as the opening of the crural canal into the thigh.

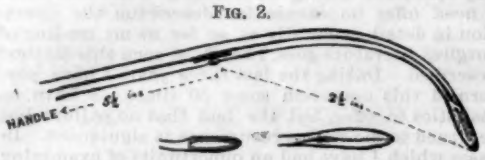
3. The upper end of the wound is held open by retractors, the surface of the aponeurosis of the external oblique muscle cleaned and an incision made in it parallel to its fibres about 2 inches long and ½ inch above the external ring of the inguinal canal. The conjoined tendon is thereby exposed.

4. The properitoneal fat, covering the true sac of the hernia, is now removed as completely as possible.

5. An opening is made with scissors at the apex of the sac, the contents, if any, are reduced, and

any adhesions separated. The edges of the sac are held apart by Spencer Wells forceps, and the forefinger is passed through the crural canal into the abdominal cavity. If the crural canal is too small to allow the passage of the forefinger then the little finger is used. I have met with cases where before the little finger could be passed I have had to insert the blades of a Spencer Wells forceps and dilate the neck of the sac by gently separating the blades. The finger when passed is flexed forwards so that the tip presses against the conjoined tendon. A pair of closed curved "catch" forceps (see Fig. 2) is passed along the flexor surface of the

FIG. 2.



inserted finger until the tip of the forceps is against the conjoined tendon; the tip of the forceps is pushed through the conjoined tendon, and appears at the upper end of the skin incision. The opposed surfaces of the blades of the forceps are grooved, the better to hold a closed pair of Kocher's hernia forceps, the tips of whose blades are now inserted between the blades of the curved forceps. The latter are withdrawn with the Kocher forceps in their grip, so that the blades of the latter forceps appear at the opening at the apex of the hernial sac. The passage of the finger through the crural canal is important at this stage, as thereby the danger of injuring or nipping intestine or omentum by the blades of the forceps is avoided.

6. The edges of the sac are then caught between the blades of the Kocher forceps and the sac is pulled inside out, appearing through the conjoined tendon. This manœuvre is carried out gently but firmly, and the peritoneal lining of the crural canal is stripped completely away from the canal and invaginated together with the sac of the hernia.

7. The sac is transfixed with a full-curved needle, threaded with catgut, close to the conjoined tendon, ligatured, and then cut away. One end of the catgut is again threaded and the needle passed through the conjoined tendon on one side of the stump, through the stump itself and through the tendon on the other side of the stump, and the two ends tied, the stump thereby being fixed to the conjoined tendon, and retraction being prevented.

8. The slit in the aponeurosis of the external oblique muscle is closed with a continuous catgut suture; the pectineus muscle and fascia are brought into apposition with Poupart's ligament by a stout catgut suture; the skin incision is closed with silkworm gut, and a gauze dressing and firm spica bandage applied.

In practising this operation it is at once obvious that it is necessary to use forceps with curved blades for pushing through the conjoined tendon, since it is difficult, especially in a patient with a fat thigh, to tilt the blades of a straight forceps forward through the tendon. I have not yet encountered a case where I could not perform the manœuvre of invagination with ease. The only obstacle has been in some cases the narrowness of the neck of the sac hindering the passage of the finger. This has been overcome without difficulty, as I have described. The features of the operation are that the crural canal is entirely denuded of peritoneum, and that there is no pit left at the site of the crural canal which may act as the commencement of another hernial sac. On the contrary, the invagination produces a prominence towards the abdominal cavity. The recurrence of the hernia is further hindered by the fixation of the invaginated sac to the conjoined tendon.

On one occasion recently, when I was operating on a case of double femoral hernia in a female patient, I felt, on passing my finger through the right crural canal into the abdominal cavity, a freely movable body of about the size of a nectarine. On opening the abdomen to remove what proved to be a pedunculated fibroid of the uterus I took the opportunity offered to observe the invagination of the sac from within the abdominal cavity, and the appearance was entirely satisfactory.

A similar method may be used in cases of direct inguinal hernia by invaginating the sac upwards and inwards through the outer border of the rectus abdominis muscle. In one case upon which I operated with excellent result—viz., in a case of right direct inguinal hernia in a man who also had a femoral hernia on the same side—I invaginated the sac of the inguinal hernia through the rectus and the femoral sac through the conjoined tendon. The two sacs thus crossed one another obliquely.

Manchester.

A TREATMENT FOR PROLAPSUS ANI IN YOUNG CHILDREN.

BY WILLIAM GEMMILL, M.A., M.B., CH.B. EDIN., F.R.C.S. ENG.,

LATE DEMONSTRATOR OF ANATOMY, UNIVERSITY OF EDINBURGH.

IT must be clearly understood that the following method deals entirely with the prolapse *per se*, and is not concerned with the exciting causes of that condition, local and general, which must in addition receive their adequate and special treatments. This method of retaining a prolapsus ani in a young child was first tried more than two years ago. It was used without much hope of success in a case of complete prolapse which had resisted all the ordinary methods of retention, including strapping of the buttocks; consequently it was with considerable surprise that I heard the report on the following morning that no prolapse had occurred in the interval. Since this first case the method has been used in several other cases of varying degrees of severity and always with immediate relief of the condition.

The considerations which led me to attempt this treatment were as follows. Normally, when the child defæcates he assumes a position in which the forces accessory to the expulsive contraction of the great bowel (the main factor in defæcation) may act to greatest advantage. The thighs are flexed and pressed on the anterior abdominal wall. The spine is curved with concavity forwards, the pelvis tilting, so that the iliac crests almost reach the costal margins. The position thus assumed of itself decreases the capacity of the abdominal cavity, but it also is a position in which the abdominal muscles, contracting to great advantage and with great force, still further decrease that capacity. Furthermore, when the thighs are flexed on the abdomen two additional results are obtained; firstly, the soft parts of the buttocks and thighs are removed from the region of the anus, thus a great support to the pelvic floor and anal canal is withdrawn, and the anus, instead of being a deeply

embedded hidden orifice, comes to lie on the surface without support; secondly, the skin and subcutaneous tissue round the anal orifice are partly stretched, and the external part of the external sphincter is also stretched and put into a disadvantageous position for contracting efficiently. Hence it is evident that the normal position for defæcation is entirely satisfactory for the exercise of that function, and for the same reasons is favourable to the occurrence of prolapse, decreasing as it does the abdominal capacity, increasing the pressure within, and at the same time weakening the supports of the outlet.

These accessory forces, while of great advantage in defæcation in normal health, are of decided disadvantage in the treatment of prolapse, and especially is this the case when the prolapse is complete, in which type the accessory forces are doubtless the chief expelling factors. The principle then in treatment is to remove these forces as far as possible, and to bring about a condition in which the abdominal capacity responds passively to the decrease in contents brought about by the evacuating contractions of the large bowel, and is not actively decreased by the strength of the accessory forces. This is attained simply by preventing the flexion of the thighs and spine. A straight wooden splint, well padded and covered with mackintosh, is applied to the back of the child of a length to reach from the neck to the heels, and the child is fixed to the splint by two bandages, one round the thorax and the other round the lower limbs. More recently I have been using a similar splint with a hiatus in the region of the anus bridged by a circle of iron, as shown in the diagram. This allows defæcation without soiling of

Sketch of splint for treatment of prolapsus ani. 1. Wooden splinting. 2. Hiatus for evacuation and local treatment. 3. Iron circle screwed to splint.

the splint, and also easy access for such local treatment as cold douching, &c. The result obtained is that the extended position of the child prevents the action of the accessory forces in great part, for the abdominal muscles are placed at a disadvantage for contracting. This position also prevents the decrease in abdominal capacity from flexion, as explained above. Hence evacuation takes place almost entirely from the muscular action of the great bowel. The removal also of the natural support which the soft parts give to the anal canal and sphincters is prevented, and the splint itself gives additional local support by pressing on the soft parts of the buttocks, from which it follows that the hiatus must not be too large, a condition in which this local pressure would be lost.

The relief which this method gives is immediate, the bowel remaining in the abdomen after reduction from the beginning and no prolapse occurring even during defæcation, for which the splint must not be removed. The advantages are efficiency, simplicity, and a minimum amount of trouble in the management of the child, who soon becomes quite comfortable and happy. The splint may be retained as long as is necessary for the child to regain health, for the sphincters to retain tone, and for a normal condition of the parts to return.

The Infirmary, Cleveland-street, W.

A CASE OF DELAYED CHLOROFORM POISONING.

BY H. P. FAIRLIE, M.D. GLASG.,
ANÆSTHETIST TO THE ROYAL AND WESTERN INFIRMARIES, GLASGOW.

THE following case of delayed chloroform poisoning is of interest for two reasons: (1) its late onset and (2) its rapid course.

The patient, a young woman aged 24, spare and rather nervous, was admitted to a nursing home on June 29th, 1914. During the two days which elapsed before operation her temperature was about 99° F. and her pulse about 80 per minute. Her heart and lungs were normal. The urine was acid and clear, had a specific gravity of 1030, and contained neither albumin nor sugar. On July 1st a laparotomy was performed; double tuberculous pyosalpinx was found, along with diffuse tuberculous peritonitis in the pelvis. During manipulation one Fallopian tube ruptured. Both were removed, and the wound was closed with drainage. The administration of the anæsthetic commenced at 3 P.M. and lasted for 38 minutes. Chloroform was administered throughout, during the first nine minutes on a Schimmelbusch mask, and then by the Vernon-Harcourt inhaler. Owing to the patient's nervousness the induction was protracted and three drachms of chloroform were given on the mask. Thereafter the anæsthesia was well maintained by the Vernon-Harcourt inhaler at 2 per cent. until five minutes before the end of the administration, when 1'8 per cent. sufficed; 5½ drachms of chloroform were given by the inhaler. The anæsthesia was satisfactory, with complete relaxation. On return to bed the patient's condition was good, the pulse 100 per minute and of good volume. During the next two days she progressed favourably, and with the exception of pain and attacks of hiccough made no complaint. Thirty-six hours after operation she vomited a small quantity (about an ounce) of brownish fluid. Forty-eight hours after the operation the dressing was stained and the wound dressed. A dose of castor-oil was ordered five hours later, but when an attempt was made to administer it at 8 P.M. on July 3rd—i.e., 53 hours after operation, the patient refused it, clenching her teeth and behaving in a peculiar manner. Although no characteristic symptoms appeared till next morning, when vomiting commenced, this seems to have been the first indication of the presence of acidosis, and during the night of July 3rd she seemed dull and stupid. Sixty-five hours after the operation vomiting of small quantities of brownish, coffee-ground fluid commenced and continued at frequent intervals. The patient was now comatose. Bicarbonate of soda and glucose were ordered in four-hourly doses per rectum, but no improvement resulted. The coma deepened, and along with this the face flushed and the pupils dilated, a decided odour of acetone appeared in the breath, and traces of acetone and albumin were found in the urine. Seventy-two hours after the operation Cheyne-Stokes respiration developed, the patient gradually sank, her temperature rose to 105·8°, and death took place nine hours later, about 24 hours after the onset of acidosis. A post-mortem examination was not obtained.

This case, although presenting many of the

typical features of delayed chloroform poisoning, is of interest from the fact that definite symptoms did not develop for considerably more than 48 hours after the administration. Buxton [1] gives the usual time of onset as from 12 to 42 hours, and Hewitt [2] from 10 to 48 hours after anæsthesia. After the onset of symptoms the case ran a very rapid course, persistent vomiting commencing only 16 hours before the end. Owing to the employment of the Vernon-Harcourt inhaler the amount of chloroform administered was small relative to the length of anæsthesia, the importance of which Buxton [3] emphasises.

Glasgow.

A CASE OF ACROMEGALY 200 YEARS AGO.

BY LEONARD MARK, M.D. DURH.

IN the early Georgian period there lived at Scarborough a man named Richard Dickinson, of whom it is recorded that the singularity of his figure contributed to bring him into great notice among the gentry and others who visited Scarborough Spa, where he followed the double occupation of shoe-cleaner and vendor of gingerbread. He did not escape the notice of painters and poets of his time, and there are not less than seven original resemblances of him preserved by different artists, and copies of the same innumerably multiplied.

FIG. 1.

Richard Dickinson. (From a print dated 1728.)

Dr. Everley Taylor, of Scarborough, who is well known for the great interest he takes in all local and antiquarian matters, was reading "Acromegaly: a Personal Experience," when his attention was drawn to the fact that some of the peculiarities of this rare disease were to be found depicted in these portraits of Dickie Dickinson, and that we may have here the earliest representations of an acromegalic to be found in England. Some of the features of the disease are repeated in several of the pictures, so that it cannot be due to accident or faulty drawing if the various artists display these several peculiarities.

FIG. 2.

"Richd. Dickison." (From a contemporary mezzotint.)

We find the striking acromegalic facies in Fig. 1 The most obvious peculiarity is the very large lower jaw, depicted in five of the prints. This is accompanied by lengthening of the face and pronounced naso-labial folds. In one picture (Fig. 3) the marked prognathism gives the face the peculiar curve, concave from above downwards. In all the pictures the lips are large and prominent, leaving the mouth open and the teeth conspicuous. The massive chest with broad shoulders and the neck

FIG. 3

"Mr. Richard Dickinson of Scarborough Spaw."

[1] Dudley Buxton: Anæsthetics, p. 299.
[2] Sir Frederick Hewitt: Anæsthetics and their Administration, p. 639.
[3] Loc. cit.

buried between them, seen in Fig. 3, is a well-marked peculiarity, the one generally represented in *Punch*. The other symptoms which give the disease its name (acromegaly, big ends) are to be found in the large hands and feet in some of the pictures. The fingers are increased in length but not in breadth (Pierre Marie's *type en long*) (Fig. 2). In two pictures the feet are large and everted. The knock-knee and the bent-up condition of the lower extremities seen in all the pictures is due to some paralysis. The patient has probably in childhood suffered from rickets. He really seems to suffer from a variety of complaints, including some rheumatic affection of his left hand. The ulnar deflection is well depicted. (Fig. 1.)

The writer is indebted to Mr. Meredith T. Whittaker, J.P., of Weaponness Park, Scarborough, for the loan of five pictures and for the trouble he has taken in kindly supplying information about this curious individual. Mr. Whittaker has a very large collection of pictures and prints connected with Scarborough, and being most interested in the fact that possibly the earliest representations of a rare disease, only recognised of late years, are to be found at Scarborough, he has been good enough to write:—

I send you five portraits of Dickinson. I think the etching best answers your purpose. I have the companion to it framed showing Dickie seated on his chest and his head tilted sideways, which displays the enormous length of his jaw. Probably the pictures vary on account of the portrait being drawn at different periods of the disease. I do not know the date of the etching. I have a copy of the one by Virtue; this was issued in 1725.

Dickie had a trip to London, and it was probable on that occasion when he was painted.

Settrington, who was a local bookseller, published a portrait of him in 1726, which I send. The two mezzotints are rare and one is in excellent preservation. These appear to me to be copied from Hysing, although the position is altered. Dickie was born in 1670; he was appointed as governor of the Spa in 1700, and had charge of the lavatories. He was probably of a low type of mind of an immoral age. According to the pictures his house was one of good class, and I have seen it recorded that it was showily furnished. The landslide of February, 1737–8, would cause his property great damage, and he apparently never got over the shock, and he died some time in 1738. His age would be 68.

It is interesting to think that we have here, perhaps, the earliest representation of an acromegalic to be found in England. Some earlier ones have been recognised on the continent—for instance, the portrait of a "giant" at the court of the Elector of the Palatinate, Frederick II., preserved in the Ambras-Schloss in the Tyrol, painted life size in 1553 by his court painter.

Another of still earlier date, of special interest at the present moment, is a carved figure of a woman, dating from the thirteenth century, which was placed high up on one of the flying buttresses of Reims Cathedral. This statue has been described as pointing out in a striking way the physical characteristics of acromegaly. As it stood on the north side of the cathedral, which was the one which suffered least from the early bombardment, there were hopes that it had been spared. At the moment of writing, however, the account of a renewed bombardment of Reims leaves one little hope that this interesting relic of the past, after weathering the storms of seven centuries, is not now to be reckoned amongst the innocent victims who have fallen before the spread of German Kultur.

Oxford-terrace, Hyde Park, W.

TRIGGER FINGER, ITS CAUSE AND MECHANISM.

BY ADONIRAM B. JUDSON, M.D.

A PROFESSIONAL man, 76 years old, had an attack of arthritis in the fingers of both hands in June, 1913, with resulting trigger finger in the proximal phalangeal joint of the middle finger of the right hand, with swelling and deformity, and stiffness of the joints of the middle and ring fingers. These results are still present. Motion past the right angle in either flexion or extension develops a painful snap or jerk. This may be described as a momentary hesitation, followed by a sudden acceleration. The jerk is more severe after the joint has been undisturbed for some time, and especially on waking in the morning. After it has been repeated a number of times for experiment or observation it is painless and comparatively slight. It is never entirely absent. When the hand is quiet there is no pain except what is felt in chronic arthritis on pressure or when motion is forced beyond the point of comfort. Many of the uses of the hand are interfered with. A pencil cannot be sharpened in the usual way by flexion and extension of the fingers. It also impedes writing and sewing. A woman thus affected said that a needle in her fingers seemed as large as a pencil. Other manual movements are at times brought to a sudden stop in a surprising, inconvenient, and more or less painful way. The momentary pain is sometimes very severe.

Cases of this kind have been occasionally reported, and they have given rise to an extensive "literature" devoted largely to cause and mechanism. The peculiar action of a trigger finger resembles that seen when a pocket-knife is opened or shut. Movement is smooth till a square shoulder at the near end of the blade presents an obstacle which retards motion till a certain point is reached when motion is accelerated with a jerk. A counterpart of this obstacle may be found perhaps in a node on an articular surface where it would cause the halting action of a trigger finger. In the construction of a knife, however, an important feature is present which is absent from the anatomy of the hand, and that is the strong steel spring concealed in the handle of the knife. It produces positive pressure between the surfaces composing the metallic joint. If the spring were absent, or if its place were taken by a strip of some inert substance like cork, there would be no jerk, and shutting and opening the knife would be perfectly smooth. While there is nothing very closely resembling a steel spring in the hand or forearm, still we may find in muscular action a force which draws the surfaces together and creates a pressure comparable with that produced by the steel spring.

The fingers require not only delicacy and swiftness, but also strength. Small in bulk and weight, and far removed from the point of resistance in the inertia of the trunk, they still are endowed with great strength. Their power comes from important groups of muscular fibres assembled in the mass of the forearm. The long tendons of one set, the flexor sublimis, are inserted in the bases of the second phalanges. They make pressure on the articular surfaces, especially those of the nearest joint, the affected one in the case here reported, pressure augmented by the pull coming from the other group, the flexor profundus, whose tendons

pierce those of the sublimis to be inserted in the distal phalanges. These tendons are bound to the phalanges by fibrous sheaths, and as they lie close to the bones and parallel with them a large part of their force is expended in pressing the articular surfaces together, the residue being given to moving the joint.

Motion is doubtless impeded by intra-articular irregularities in other parts of the body where joint surfaces are held in contact by the static resistance of circumarticular ligaments and to some degree by the dynamic influence of muscular contraction. No joints, however, but those of the digits are subject to the exceptionally great pressure of powerful muscles acting through tendons lying parallel to, and in close contact with, long bones. It is clear that when digital muscles are in action they concentrate on small articular surfaces pressure as positive and distinct as that made by the steel spring of the pocket knife.

After witnessing the dissection of a normal hand, by the kindness of Dr. Gallaudet, it appeared to me that the node present on the radial side of the base of the second phalanx of the middle finger of the affected hand might extend into the joint, where it would project as an obstacle on the palmar edge of the articular surface at the base of the phalanx. At this point it would be in apposition, when the joint is at a right angle, with the rounded lateral articulating condyle on the radial side of the head of the proximal phalanx. It is evident that when these two eminences, one abnormal and the other normal, pass each other, as they do when the joint traverses a right angle, they must, when pressed together by muscular contraction, experience a momentary hesitation followed by an acceleration of speed such as is seen in trigger finger. That there may be cases which do not have their origin in arthritis is suggested by the personal experience and research of my frinds, Dr. Weir and Dr. Abbe.

It is surmised that as the flexors are stronger than the extensors the jerk of trigger finger would be more severe in flexion than in extension. This is found to be the case. And further, it is found that the jerk is lessened or absent when passive is substituted for active motion. These and other experiments are interesting and sustain my proposition to a certain extent, but they are wanting in scientific accuracy and their results are not constant. Aside from these experimental observations the presence of unusual pressure between the joint surfaces when voluntary motion is made by the fingers and the probable presence of a node on one of the surfaces give sufficient warrant to the following proposition. In trigger finger an obstacle of arthritic origin on one of the articulating surfaces is surmounted with momentary hesitation followed by a jerk or sudden acceleration of speed, as the joint moves under the exceptional pressure which voluntary action interposes between the articular surfaces of the digital joints.

X ray views have been taken in this case, but they fail to show any notable change in the bone. Ordinary inspection, however, shows swelling and deformity, with a projection on the radial side of the base of the second phalanx of the middle finger. The joint is an eighth of an inch wider at this point than its fellow of the other hand. Dissection would probably reveal surface irregularity. It is to be hoped, however, that a necropsy will not be proposed in the immediate future, as the joint herein described is part of the still good right hand of the author.

There has been no local treatment except by a gutter splint of sheet aluminium applied with a single strip of adhesive plaster to keep the joint extended at night. At the end of a year the jerk is less marked, but pain and stiffness continue and involve the metacarpo-phalangeal joint. Persistent catharsis has been maintained with oleum ricini, and as a result, perhaps, no other joint of the body has been attacked by the infection which is held to be the cause of chronic multiple arthritis, an affection intractable and as yet not well understood.

New York.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Cases.—Spontaneous Gastro-enterostomy.

A MEETING of this section was held on Dec. 11th, Sir FREDERIC EVE, the Vice-President, being in the chair.

Dr. ALEXANDER MORISON showed a case of Præcordial Thoracostomy for Heart Disease. The patient, a boy aged 16, was stated to have been in good health and capable of athletic exercise until Christmas, 1913. He had played football weekly from October till late in December. He then became breathless and had severe palpitation. No history of rheumatism or scarlet fever was obtainable. He was admitted to hospital in February, 1914, with tachycardia, irregular action of the heart, breathlessness, and a mitral systolic bruit. The area of cardiac dulness was much increased; powerful heaving of left ribs and cartilages from the fourth to the sixth and movement of the sternum were noticed. He was rendered comfortable by rest and taking tincture of digitalis, but without any diminution of thoracic movement, and was discharged in April feeling comfortable. He was told to return if again distressed, for præcordial thoracostomy. He did so in May and was again admitted. The operation was performed by Mr. Mower White in June, when 4½ in. and 5½ in. of the fifth and sixth ribs and cartilages respectively were removed. No costopericardial adhesions were found. Since then he had been comfortable, but still required tincture of digitalis. The object of the operation was to relieve the enlarged heart of the labour of raising the chest wall as well as driving blood.

Dr. ARTHUR F. HERTZ showed a case of Cardiac Achalasia (so-called cardiospasm). The woman, aged 36, had complained for ten years of pain under the lower part of the sternum and a choking sensation under the upper part whenever she ate. She had always had an impression that her food had difficulty in getting into her stomach. About two years ago she fell from a ladder and hit her chest; since then she had constantly vomited part of the food after every meal, and it came up quite undigested, but mixed with a considerable amount of mucous saliva. During the night she frequently woke owing to regurgitation of her evening meal through her nose; the food was now sour, especially if several hours had elapsed since the meal, in contrast to the food brought up during meals, which was never sour. The condition became steadily worse until nine weeks ago, when she ceased to be able to keep down any solid food at all. During the three days before she was seen six weeks ago, no food had been retained at all. An X ray examination showed that the whole œsophagus was dilated, the obstruction being at the cardiac orifice of the stomach. There was violent peristalsis in the œsophagus, but the food only trickled with extreme slowness into the stomach. The condition was diagnosed as cardiac achalasia, and a mercury tube was passed. This met with no obstruction at the cardia, and the patient had since been able to retain her food, unless it was insufficiently masticated, by passing the tube immediately before each meal. The term "achalasia" (α, not; χαλάω, I relax) was coined for him (Dr. Hertz) by Sir Cooper Perry to replace the term "spasm," which was incorrect for the following reasons: (1) Hypertrophy of the cardiac sphincter is never observed after death, even if the

obstruction has lasted for 20 or more years, although long-continued spasm would necessarily lead to hypertrophy; (2) the mercury tube passes without any sense of obstruction through the cardia, which would be impossible if a spasm were present; (3) the mercury tube can be withdrawn without any difficulty, whereas it would be grasped by the sphincter were cardiospasm really present. He believed that the condition was due to the absence of the normal relaxation of the cardia, which should occur when each peristaltic wave reached it. Similarly, many cases of so-called pylorospasm were due to pyloric achalasia, and ileo-cæcal achalasia was the most frequent cause of ileal stasis.

Dr. HERTZ and Mr. C. H. FAGGE contributed the notes of a case of Spontaneous Gastro-enterostomy with subsequent perforation and recovery after operation. The patient was a woman, aged 48, who for six years had suffered from indigestion, the pain occurring from one hour to an hour and a half after food. Vomiting and hæmatemesis had been present. In 1913 she had been treated for gastric ulcer. In 1914 she developed sudden violent pain in the epigastrium, and the diagnosis of perforated gastric ulcer was made. At the operation Mr. Fagge found an opening between the stomach and jejunum—i.e., a gastro-jejunostomy had taken place. Secondary perforation had followed. The parts were left *in situ* and protected by suturing the jejunum to the stomach and omentum. She had since left the hospital perfectly well. X rays showed that the stomach was small and emptied after 20 minutes through the gastro-jejunostomy opening, very little bismuth passing through the pylorus.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.

A MEETING of this section was held on Nov. 27th, Mr. T. H. KELLOCK, the President, being in the chair.

Dr. E. B. GUNSON showed a child with Tooth Erupted at Birth. It was a male infant, one of twins born at full term. The left lower median incisor was erupted at birth. On the tenth day the tooth, which was then loose and attached only by the gum, was removed as its presence interfered with suckling. The right lower median incisor had then also appeared through the gum. The child was well developed and presented no other abnormality. The fellow twin was normal.

Dr. J. PORTER PARKINSON showed a case of Friedreich's Disease with Spastic Phenomena. The boy, aged 13 years, was the ninth of 10 children; his mother's eleventh pregnancy terminated in a miscarriage. For three years before the patient's birth the mother was very depressed and almost insane. The patient was a full-term child, healthy at birth, but before the age of 3 years had scarlet fever, measles, chicken-pox, whooping-cough, and diphtheria. He began to walk at 3 years, but never walked well, and was never very intelligent. He was now a fairly well-grown boy with a rather unintelligent expression. Speech indistinct, slurred and syllabic. Gait spastic, uncertain; slight difficulty in turning. Romberg's sign negative. The legs were held stiffly, the muscles hard and well developed; the foot showed marked pes cavus with some equinus; the great toe was hyperextended at the proximal joint, and the extensor tendon very prominent. There were marked knee and ankle clonus and an extensor plantar reflex. The arms were in every way normal, grasps equal, no ataxy of arms or legs. Cranial nerves normal, no nystagmus, and no changes in the fundi. The spine was normal, and the bladder and rectum not affected. Sensation normal. No similar disease in the family.

Mr. L. BROMLEY showed a case of Tumour of the Upper Extremity of the Femur in a boy aged 12 years. A swelling of the right thigh had been noticed for the previous seven or eight weeks. He complained of pain in the right leg, especially after walking; on some days the pain was so severe that he was unable to walk. When the patient was aged 3 years he was said to have fractured the right femur; since then he had had intermittent pains of an aching character, which had increased lately. On examination a hard swelling of the upper third of the right femur was felt. There was no definite margin, and no heat or tenderness. Movements at the hip-joint were free. A skiagram showed an endosteal growth of the femur. On exploration the bone was found to be expanded and covered by normal periosteum; a thin layer of compact bone surrounded a mass of cartilage which had entirely replaced the medullary cavity. Microscopic examination showed pure chondroma, and there was no suggestion of malignancy.

Dr. T. R. WHIPHAM showed two cases of Heart-block. 1. A female infant, aged 2 years and 2 months. The child was born at full term, and had always been backward. The first tooth was not cut until the age of 9 months, and she did not sit up until she was a year old. Up to the present she has not walked or talked. She was a well-nourished child with a good colour, and presented no clubbing of the digits. The pulse was slow, full, and regular. The right side of the heart in the skiagram appeared to be enlarged, and the outline of the organ was almost globular. All over the præcordium a loud systolic bruit was audible, the maximum intensity being between the apex and the left sternal border and extending up to the pulmonary area. The heart rate was slow, but it varied from time to time, the lowest recorded being 48, and the highest 80. The child was first admitted into the Evelina Hospital with whooping-cough and slight bronchitis, but even then the heart was only beating on the average about 64 per minute, and at times the respirations were quicker than the pulse. Paroxysms of coughing, moreover, caused very little, if any, acceleration of the heart. No cardiac symptoms had at any time been observed. An electrocardiogram showed a perfectly regular 2:1 heart-block. There was a polycythæmia of 8,400,000 red corpuscles per cubic millimetre and the hæmoglobin value was 110 per cent. 2. A girl, aged 12 years. With the exception of measles at an early age she had had no illness. Six years ago it was first noticed that she had a slow pulse, but it was not until 18 months ago that any cardiac symptoms occurred; since then she had complained of pain around the heart on exertion. She was well-grown and showed no cyanosis. The pulse was slow, usually between 50 and 60 per minute, and slightly irregular in rhythm; the extreme rates noted had been 40 and 64. The heart was considerably enlarged, especially on the left side, as seen in a skiagram, and there was a heaving impulse in the fifth interspace well outside the nipple line. A systolic bruit was audible with its maximum intensity in the fourth interspace near the sternum; occasionally at the apex and a little outside a slight diastolic whiff had been heard. The second sound in the pulmonary area was at times reduplicated. An electrocardiogram and a polygraph tracing showed a marked dissociation between the auricular and ventricular beats, and an irregularity in the rhythm of the latter. A subcutaneous injection of atropine sulphate (1/60 gr.) caused the ventricular rate to be increased from 40 to 60 per minute, but did not affect its arrhythmia. The patient at times had complete heart-block with pulse slow and regular, and at times incomplete heart-block of high grade (3:2, 2:1, and mixed) which produced an irregular pulse.

Dr. WHIPHAM also showed a case of Diabetes Insipidus with Infantilism. The patient, a boy aged 4 years, was the sixth child in a family of eight, all of whom had been backward. He was bottle-fed and cut his teeth late, and did not walk until he was 2 years old. He could not yet talk. Height, 2 ft. 9 in.; weight, 1st. 6½ lb. About two years ago he started to pass a large quantity of urine and to complain of great thirst and to lose flesh. On admission to hospital he was passing from 200 to 900 c.c. of urine per diem, but under general treatment and rest the maximum had been 300 c.c. in a day. The urine was very pale, of low specific gravity, and contained no abnormal elements.

Dr. J. D. ROLLESTON showed a case of Giant Nævus. The patient was a girl, aged 7 years, showing a pigmented hairy and warty nævus and numerous accessory nævi. The principal nævus started in front, slightly internal to the anterior border of each sternomastoid, and passed backwards, occupying each posterior triangle of the neck and extending 1 inch below each clavicle. Behind it extended as a continuous sheet upwards to the external occipital protuberance, outwards to the acromion process and downwards to the spine of the twelfth dorsal vertebra, where it ended in a tapering point. The pigmentation of the nævus was dark brown, interspersed with vitiliginous patches, and was interrupted at the periphery by linear areas of unpigmented skin running obliquely downwards and outwards. The skin of the pigmented area was sharply marked off, but was not raised above the level of the normal skin, and showed no sensory changes. There was

no spina bifida. The nævus was covered by downy hairs mostly of a light colour, except in the interscapular region, where they were darker. Several warty growths of the same colour as the pigmented skin were present in the cervical and upper dorsal area of the nævus, the largest being situated just below and to the left of the external occipital protuberance. In addition to the principal nævus other nævi were scattered over the rest of the skin. The largest were situated on the right thigh and right buttock. Most of the lesions situated on the limbs were hairy, but a few were smooth. A few smooth nævi were present on the soles, but the palms were free. The fewest and smallest lesions were on the face. There was no hereditary or familial history of similar lesions, but there was a definite history of a maternal impression. During the third or fourth month of pregnancy the mother had been frightened by a black and tan dog which had tried to bite her husband, and had thrown her arms over her head. She had anticipated that the child would be marked, though her medical attendant had tried to persuade her to the contrary.

Dr. BERNARD E. MYERS showed a case of Splenomegaly improved by antisyphilitic treatment. The patient, a boy aged 1 year 11 months, was admitted to the Royal Waterloo Hospital last June (then aged 18 months) for diarrhœa and wasting. His weight at that time was 9 lb. 8 oz. His father died two years ago as the result of an accident, and his mother died from phthisis when the patient was a year old. At the age of 4 months the patient had measles. When first examined in June he presented a very wasted appearance all over. His abdomen was distended. The child was listless, anæmic, of an earthy complexion, and with a sunken fontanelle. Some signs of rickets were present. There were about six motions in the 24 hours. The temperature and pulse were normal on admission, while the respiratory rate was slightly raised. The spleen was enlarged, moderately firm, and extended to just below the level of the umbilicus. The edge of the liver was felt 1½ inches below the costal margin. No albumin was discovered in the urine, which was acid and of specific gravity 1020. The Wassermann and von Pirquet reactions were both positive. The blood count on June 17th was :—

Red blood corpuscles	3,040,000 per cubic millimetre.
Hæmoglobin	44·0 per cent.
Leucocytes	14,000 per cubic millimetre.
Polynuclears	35·8 per cent.
Lymphocytes	54·8 ,,
Large mononuclears	6·0 ,,
Transitionals	1·4 ,,
Myelocytes	2·0 ,,
	100·0 ,,
Normoblasts	3·0 ,,
Megaloblasts	1·2 ,,

A provisional diagnosis of splenic anæmia of infancy was made. Hydrarg. ō creta, ½ gr. t.d.s., together with a bismuth mixture, was given. Only slight improvement being noticeable, this treatment was stopped in favour of mercurial inunction over the region of the spleen. The diet consisted of milk in various forms, arrowroot, meat-juice, and small quantities of brandy. Distinct and steady improvement followed the inunctions. The diarrhœa gradually ceased and the child's appearance became healthier. The spleen was noticeably smaller week by week. On Sept. 17th he was put on syrup. ferri iodidi, 10 minims t.d.s. On Oct. 9th a blood count showed—

Red blood corpuscles	5,640,000 per cubic millimetre.
Hæmoglobin	90·0 per cent.
Leucocytes	10,000 per cubic millimetre.
Polynuclears	30·2 per cent.
Lymphocytes	53·6 ,,
Large mononuclears	12·0 ,,
Transitionals	4·2 ,,
	100·0 ,,

Red blood corpuscles appeared normal. During his first two months in hospital his temperature was raised on and off. His present weight is 1 st. 4 lb. 12 oz. He looks well and is now a cheerful, intelligent child, and takes ordinary diet. Both spleen and liver are still a little enlarged. He has suffered from catarrh of the lungs, but this is now much better. On Nov. 20th his blood was again examined by Dr. Leathem and his report showed :—

Red blood corpuscles	6,130,000 per cubic millimetre
Hæmoglobin	100·0 per cent.
Leucocytes	16,800 per cubic millimetre.
Polynuclears	57·4 per cent.
Lymphocytes	19·6 ,,
Large mononuclears	16·8 ,,
Transitionals	3·0 ,,
Eosinophiles	3·2 ,,
	100·0 ,,
Normoblasts	1·0 ,,

Red blood corpuscles appeared normal in size and shape. Wassermann reaction positive, although not strongly marked.

Mr. PHILIP TURNER showed a case of Double-retained Testicle in which the left testicle was transplanted to the right side of the scrotum and the right testicle to the left side. The patient, a boy aged 12 years, was admitted to hospital for double inguinal hernia with imperfectly descended testicles. Both testicles, which appeared to be ill-developed, could be palpated in the inguinal canals; they had never descended below the external abdominal rings. The following operation was performed: The right sac and spermatic cord were exposed by a small incision through the external oblique just above the internal abdominal ring. The hernial sac was separated from the vas and veins as far as the internal ring, and there ligatured. By traction on the distal part of the sac the testicle was drawn through the small incision in the external oblique. The sac was then ligatured immediately above the tunica vaginalis and removed. The remains of the gubernaculum were then transfixed, ligatured, and divided, the ends of the suture being left long. The testicle, enclosed in the tunica vaginalis, was now, except for its connexion with the spermatic cord, quite free. An incision about an inch long was then made over the front of the left side of the scrotum. The free ends of the ligature transfixing the gubernaculum were then seized with Spencer Wells forceps, which were then introduced through the incision in the external oblique, pushed along the inguinal canal, through the external ring into the right side of the scrotum. The ends of the forceps were then made to impinge against the scrotal septum. A small incision was now made on the forceps through the wound in the left side of the scrotum. The forceps carrying the ligature were pushed through to the left side and the ends of the ligature secured. The forceps were then withdrawn, and by pulling on the ligature the right testicle was drawn along the track made by the forceps along the inguinal canal through the scrotal septum to the left side of the scrotum. Both wounds were then closed. The patient was readmitted two months later and the left testicle was then transplanted to the right side of the scrotum by a similar operation. No sutures were necessary for the fixation of the testicle in its new position, the contraction of the opening in the septum preventing its return and exercising a gentle continuous traction which was absent in the ordinary method of orchidopexy.

Mr. TURNER also showed: 1. A case of Double Retained Testicle in which the right testicle only had been transplanted. He proposed to transplant the left testicle later. 2. A case of Seasonal Enlargement of the Parotid Glands. The patient, a boy aged 14, had had painful enlargement of both parotid glands every spring and autumn for the last nine years. The other salivary glands were not affected, and the boy showed no other abnormality except that he was unduly sensitive to cold.

Dr. F. J. POYNTON and Mr. H. MORRISTON DAVIES showed a case of Cleido-cranio-dysostosis in which the removal of the outer part of the imperfect right clavicle relieved severe symptoms from pressure on the brachial plexus. The patient, a girl aged 20 years, had been reported originally by Dr. E. I. Spriggs in THE LANCET.[1] In December, 1913, she was shown by Dr. Poynton at the Clinical Section for an opinion as to the best method of treatment of severe symptoms, pointing to pressure on the right brachial plexus. Her work as a dressmaker had been interfered with by severe shooting pains down the inner side of the arm and over the front of the chest. There

[1] THE LANCET, Dec. 7th, 1907, p. 1599.

was marked loss of power in the right hand, and much circulatory disturbance. When the shoulder was depressed the right pulse was diminished in volume, a sign which assisted in the exclusion of syringomyelia, a condition which has been described in association with this form of dysostosis. Mr. Davies removed the outer fragment of the clavicle, and when the patient left the hospital there was already clear improvement. She had been completely free of the severe neuralgic pains, her hand had recovered power, and she had resumed her occupation. The only complaint now was of a dull ache in both shoulders, brought on by the long hours during which she sat in a position sewing over her work that tended to make the shoulders "over-stoop." This was relieved by sitting up with the shoulders braced back, and was of an entirely different nature to the former trouble, which was caused by the inner end of the outer fragment of the right clavicle hitching under the outer end of the inner one.

Dr. FREDERICK LANGMEAD showed a case of Achondroplasia, Pseudo-rachitic. The patient, a female infant aged 6 months, was first seen when 9 weeks old. Many signs of rickets were present, but the legs were disproportionately short compared with the body, and the finger tips with arms extended reached only to just below the crest of the ilium. On this account the provisional diagnosis of achondroplasia had been made, although the head, face, and hands had not the characteristic appearance.

Dr. J. L. BUNCH showed a case of Keratosis Follicularis Spinulosa in a boy aged 4. Lesions had first been noticed about 14 months ago on the neck and later on the arms, back, and abdomen. They consisted of small acuminate papules which were more perceptible to the touch than to the eye. There were no inflammatory phenomena.

Dr. C. O. HAWTHORNE showed a case of Acholuric Jaundice. The patient, a girl aged 1 year and 3 months, was a first born child, said to be jaundiced from birth. She had jaundice, considerable enlargement of the spleen, some enlargement of the liver, no bile in her urine, and normal stools. Blood examination showed white cells, 14,500 (polymorphs, 44·8; small lymphocytes, 47·2; large mononuclears, 6·8). The blood serum contained bile pigment.

Dr. HAWTHORNE also showed a case of Paramyoclonus Multiplex. The patient, a boy aged 6 years, was said to have been jerky since birth. There were frequent, quick, clonic contractions most marked in the abdominal muscles, but visible also in the shoulders, upper arms, thighs, cremaster muscles, and to some extent in the face. The contractions were bilateral, but the two sides were not always affected simultaneously. There was no family history of rheumatism, chorea, or epilepsy.

SECTION OF LARYNGOLOGY.

Exhibition of Cases.

A MEETING of this section was held on Dec. 4th, Dr. G. WILLIAM HILL, the President, being in the chair.

Sir STCLAIR THOMSON demonstrated a case of Early Malignant Disease of the Larynx, shown at the last meeting, and referred to some details of the operation of laryngofissure which he had performed under chloroform after preliminary injection of eudrenine. He had injected 10–15 minims of cocaine solution into the trachea before making the opening, thus abolishing the spasm of the glottis. No Hahn's tube was used, as he had found that an ordinary tracheotomy tube was sufficient for such cases. He referred to the difficulty in removing the whole of the disease, especially from the arytenoid and subglottic regions, and showed sections from the case. As it was evident that some of the growth had not been removed, he performed a second operation ten days after the first, and the patient had made an excellent recovery.—The PRESIDENT pointed out that the removal of the arytenoid was liable to lead to complications, especially to difficulty of swallowing, and Dr. DAN MCKENZIE stated that he had had similar experiences.—On the other hand, Mr. HERBERT TILLEY was of opinion that excision of the arytenoid, whether partial or complete, caused no trouble whatever.—Dr. J. DUNDAS GRANT added that wherever possible the upper part of the arytenoid should be left.—Dr. W. JOBSON HORNE recalled the fact that there had been very free mobility of the vocal cord in this case, and suggested that the disease might be a pachydermia rather than malignant disease.—In this connexion Mr. STUART-LOW stated that he thought it was important to palpate the larynx with the finger because in pachydermia the tissues were softer than in malignant disease.—Sir STCLAIR THOMSON, in his reply, believed that as a general rule removal of the arytenoid led to complications. He stated that he had had no fatality after 20 laryngofissures. He did not think it possible to palpate beyond the upper opening of the larynx.

Sir WILLIAM MILLIGAN showed three Foreign Bodies Removed from the Bronchi. The first was the case of a boy, aged 4, who accidentally inhaled a damson stone. Sharp dyspnœa followed, of which several attacks with spasmodic coughing occurred during the ensuing ten days. X ray examination proved negative. On admission to the Royal Infirmary slight bronchitis with diminished entry of air into the left lung was noted. Examination was made under general anæsthesia. There was a sudden arrest of respiration. Rapid tracheotomy was performed and artificial respiration. Recovery ensued. The child was put back to bed for half an hour, again anæsthetised, the tracheotomy tube withdrawn, and a bronchoscope tube passed. The damson stone was seen in the left bronchus with pointed end protruding (specimen shown). It was successfully recovered with forceps. Rapid recovery followed. In the second case, a female, aged 35, accidentally sucked in a carpet-tack from her mouth. There was a sudden and severe paroxysm of dyspnœa. During the following four days several slight attacks of dyspnœa and coughing fits ensued. She was admitted to the Royal Infirmary eight days after the accident. (An X-ray photograph of the tack *in situ* was shown.) Under general anæsthesia the tack was grasped, but on traction being made the forceps slipped off. Many unsuccessful attempts at extraction were made. The patient was kept quietly in bed for three days. Vapor benzoin co. was used every two hours. The patient was again anæsthetised and removed to the X ray dark room. The fluorescent screen was employed and forceps made to grasp the tack. Withdrawal was again unsuccessful owing to the forceps not holding the stem of the tack sufficiently firmly. Many more unsuccessful attempts at extraction were made. At the suggestion of Mr. Barclay (radiographer to the Royal Infirmary) an attempt was made to twist the tack round upon its own axis. After much trouble this was accomplished, and the tack was immediately withdrawn by grasping its head (specimen shown). Despite prolonged manipulations on these two occasions no systemic disturbance followed and the patient left hospital upon the third day in perfect health. In the third case a coin was readily seen impacted about the level of the sterno-clavicular joints. It was *in situ* for ten days. Removal was made with forceps. The œsophageal wall was intact. Rapid recovery ensued (specimen shown). These cases demonstrated (1) the tolerance of the tissues under certain conditions; (2) the advisability, if not necessity, of not relying upon the results of radiography; and (3) the value of the fluorescent screen as an aid to the removal of foreign bodies from the lung.—Mr. TILLEY said that the results of radiography in these cases were often unreliable, and drew attention to the value of instantaneous photography.—Sir STCLAIR THOMSON, Dr. D. R. PATERSON, and Dr. IRWIN MOORE discussed the difficulty of holding a foreign body with long forceps, and agreed that as soon as the object had been grasped it was advisable to withdraw the bronchoscope and forceps together rather than to attempt to bring the body through the tube.—Sir WILLIAM MILLIGAN added that it was advisable to perform tracheotomy in young children so that a wider tube and shorter forceps could be used.—The PRESIDENT referred to the value of combined X rays and bronchoscopy in operations of this kind.

Sir WILLIAM MILLIGAN also showed a case of Angiofibroma of three years' standing arising in the maxillary antrum in a patient aged 17. Kuhn's per oral intubation tube was passed and the mouth packed with gauze. Lateral rhinotomy was performed. Several attempts to remove the growth failed in consequence of the furious hæmorrhage. Finally, the cavity was tightly packed and saline administered. Forty-eight hours afterwards the packing was removed, when there was again very severe hæmorrhage. A radium emanation tube (50 mgm.) was inserted into the middle of the growth. No return of hæmorrhage occurred, and there was

rapid retrogression of growth. Three weeks afterwards there was no trace of growth, but a dense, firm, fibrous mass was attached to the posterior antral wall (microscopic section shown). The general and local condition of the patient was now excellent. Sir WILLIAM MILLIGAN drew attention to the doubtful malignancy of nasal growths, and stated that although the microscopical section demonstrated tissue that appeared to be innocent the case was clinically malignant.—The PRESIDENT, Mr. TILLEY, and Dr. DUNDAS GRANT said that such cases could often be cured by radium.

Mr. TILLEY showed a Choanal Polypus with an ulcer on its posterior surface of the size of a shilling, the latter leading to some difficulty in diagnosis until the growth had been removed. In many such cases there was no recurrence, but if the polypus reappeared twice it was essential to open the antrum.—Sir WILLIAM MILLIGAN suggested that the ulcer might have been self-inflicted.

Dr. J. F. G. ELPHICK showed a patient with a Retro-pharyngeal Swelling in whom the Wassermann reaction was positive. It was agreed that the disease was probably syphilitic.

Dr. C. W. M. HOPE showed a patient from whom he had removed by stripping from underlying perichondrium a Tuberculoma of the Nasal Septum. The whole of the right side of the septal mucous membrane for a distance of 2 inches from the vestibule and almost up to the roof was found affected. Cartilage and bone were not touched. The floor of the nostril and inferior meatus were found affected and treated in the same way. Also affected anterior two-thirds of superior turbinal was removed. Sections and mass from the septum were shown.—Mr. D. VINRACE and others referred to the difficulty of distinguishing between lupus and tuberculosis.—Sir STCLAIR THOMSON had seen a similar case in which the disease lasted for 17 years, during which time it spread from the nose to the pharynx, later to the larynx, and finally to the lungs.

Dr. MCKENZIE showed some soft metal tubes for insertion into the nose after submucous resection of the nasal septum which greatly relieved the discomfort caused by nasal obstruction.

Mr. H. CLAYTON FOX showed a case with Malignant Disease of the Tonsil and Pillars of the Fauces, which was interesting because in its first stages it appeared to be a simple tonsillitis with abscess. Later the growth appeared and was microscopically papilloma, though the case was probably malignant.

Dr. L. H. PEGLER showed a Superior Maxilla from an aged female with an abnormal malar antrum behind the true maxillary cavity.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

The Threshold of Disease.

A MEETING of this section was held on Nov. 20th, Dr. WALTER G. SMITH being in the chair.

Professor J. A. LINDSAY, the President, read an address entitled "The Threshold of Disease." Dealing with the problem of early diagnosis, he chose four subjects for special consideration: (1) endocarditis, (2) gastric cancer, (3) disseminated sclerosis, and (4) pulmonary tuberculosis. 1. In acute rheumatism, endocarditis was extremely common in adults and almost the rule in children. Muffling of the first sound at the apex, slight increases in cardiac dulness, and arrhythmia were very suspicious signs. Prolonged rest in these cases was most important. 2. In a patient of 50 who had previously had a good digestion, and who was not suffering from renal or hepatic disease, cancer might be suspected if he took a dislike to flesh meats, exhibited some loss of flesh and debility, and occasionally vomited. The absence of free HCl was the rule. Hæmatemesis was rarely an early symptom. 3. Taken as a whole, the following symptoms were highly suggestive of early disseminated sclerosis—transient disturbance of vision, impairment of bladder control, paræsthesia of one or more limbs, diminution of abdominal reflex, loss of tone of sphincter iridis, giddiness, and emotional instability. 4. No tests other than finding tubercle bacilli in the sputum were convincing in making a diagnosis of incipient phthisis. Calmette's, von Pirquet's, and Arneth's, and the opsonic index method had a very limited value. We were thrown back on clinical examination. Early and very suggestive symptoms were—loss of flesh, slight afternoon pyrexia, cough, and acceleration of the pulse. The first physical signs in the chest were auscultatory, and consisted of hardness or weakness of the breath sounds. Crepitations were later. Slight hæmoptysis and night sweats were very significant. X rays were of some value, but the interpretation of the skiagram was very difficult.

Dr. SMITH referred to the vexed question as to whether signs elicited by percussion or auscultation gave earliest evidence of incipient pulmonary tuberculosis. He was inclined to believe those elicited by percussion did so.

Dr. J. F. O'CARROLL was not at all sure, when all was said and done, that the early diagnosis of disease had not as many disadvantages as advantages. There was something to be said for keeping going on as long as possible and trying to be guided by nature. As to pulmonary tuberculosis, he rather thought the debate between the value of percussion as against auscultation was a debate as to individual experience, each observer generally being impressed by the method by which he got the most information.

Dr. H. C. DRURY thoroughly agreed as to the supreme value of early diagnosis. He thought if the matter was reasoned out it would be seen that percussion would yield a very late sign as compared with auscultation. He had always believed that long before anything like crackling was discovered the roughening of the expiratory sound was the earliest departure from health.

Dr. T. G. MOORHEAD considered that a distinction should be drawn between the early diagnosis of phthisis on which one would start treatment and the early diagnosis from which statistics might be compiled with fairness.

Professor LINDSAY, in reply, said that for all statistical work in connexion with phthisis the line ought to be drawn between cases in which bacilli were found in the sputum and those in which they were not, because in one class there could only be a suspicion of the disease, whereas in the other there was positive proof.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 17th at the Royal Infirmary, Dr. A. Manknell being in the chair.—Dr. F. W. Eurich read short notes on three unusual cases of Bacillus Coli Infection. The first was that of a workman who was supposed to have strained himself whilst lifting a heavy weight. Shortly afterwards double orchitis set in which could not be accounted for in the ordinary way. Bacteriological examination of the urine revealed bacillus coli in great abundance. In the second case a man, aged 58, presented himself with swelling of both testicles, with a history of a knock two years previously, since which time he had had periodic attacks of orchitis. In this case also a bacteriological examination of the urine revealed enormous numbers of bacillus coli. The third case was that of a woman, aged 45, who on Dec. 13th, 1913, had what appeared to be a slight conjunctivitis of one eye. Four days later there was some iritis. After 10 days' treatment her condition improved, but on Jan. 23rd she had a relapse together with slight irritation of the bladder. On Feb. 3rd the condition was much worse—retinitis and turbidity of the vitreous. On Feb. 16th bacillus coli was discovered in the urine, and a vaccine prepared. In a fortnight recovery was complete.—The cases were discussed by Dr. R. A. R. Lankester, Dr. W. Mitchell, Dr. F. W. Goyder, and Dr. Manknell.—Dr. Eurich then replied.—Dr. Mitchell showed numerous X Ray Photographs of great interest.—Dr. Goyder read a paper on the Treatment of Infantile and Other Forms of Paralysis in General Practice. Treatment, he said, is based on the principle enunciated many years ago by Hugh Owen Thomas and rediscovered by Robert Jones, of Liverpool.[1] No paretic muscle has a chance of recovery so long as it remains overstretched. Hence the first rule of treatment is to fix the limb in such a position that the paretic muscles are relaxed. Operations such as tenotomy may be required for this purpose. Plaster-of-Paris splints may be used, or, better, the much lighter celluloid splints. Walking should be encouraged with the patient in the splints. It is impossible to say how much improvement will take place after this simple manœuvre. Even after

[1] THE LANCET, May 30th, 1914, pp. 1515, 1561.

many years of paralysis the improvement is often astonishing. No operations for tendon grafting should be undertaken until many months after the application of the splints. If as soon as possible after the initial attack such splints are applied, since the paretic muscles never become overstretched, recovery from paralysis, if it is going to take place at all, is certainly hastened. This principle can be applied to nearly all forms of paralysis, irrespective of their cause—e.g., wrist drop from lead or musculo-spiral injury or Erb's obstetrical paralysis. In Little's disease the element of spasm is also present, but wonders can be worked if the child has any intelligence by simple fixation in the over-corrected position for some months after simple tenotomy of the adductors or tendo Achillis according to the region affected. In many cases no tenotomy is required. More complicated procedures should be reserved for cases in which simpler ones have proved insufficient. Hence, apart from operation, much can be done by the general practitioner, especially in the early stages of infantile palsy. Treatment, though tedious, is most interesting, and often well repays the trouble taken.

LIVERPOOL MEDICAL INSTITUTION.—At the last meeting of this institution Dr. E. W. Hope, the President, from the chair, drew attention to the Belgian Doctors' and Pharmacists' Relief Fund, and a committee was formed to work with the executive of that Fund.—Mr. G. P. Newbolt read a short paper on Appendicitis in the Elderly. He reported three cases, and emphasised the fact that appendicitis did occur in those over 60 more commonly than was generally recognised, and also that perforation not infrequently took place without causing any serious initial symptoms.—The paper was discussed by the President, Mr. W. T. Thomas, and Mr. F. Larkin.—Mr. A. A. Bradburne read a short paper on Bilateral Optic Neuritis due to sphenoidal sinusitis, in which the left sixth nerve was involved; the vision of the left eye was somewhat impaired with severe occipital pain; spontaneous discharge of pus from the sphenoidal sinus was followed by gradual improvement. Total absence of any trouble in the nose pointed to sinus infection.—Captain C. Thurstan Holland read a paper on the X Ray Treatment of the Wounded at Fazakerley Hospital, fully illustrated by lantern slides. He carefully described his methods for arriving at the locality of a foreign body in the tissues illustrated. There were numerous lantern slides showing the destruction of bone and the character of the injuries produced by bullets and pieces of shell.—The President opened the discussion.—Dr. Barclay described the instrument which he had devised to facilitate rapid estimation of the depth of foreign bodies and deprecated indiscriminate removal of bullets.—Dr. J. Oram described another method based on the series of curves.—Captain Arthur W. C. Evans referred to his experiences in the Boer War, and compared them with his present work at the Fazakerley Base Hospital. He was strongly in favour when removing the bullet from the fleshy parts of making a free incision in order to save the muscles as much as possible. The muscles should be separated rather than cut across. The bullet of to-day made a much more serious wound than the bullet of the Boer War.—Captain Holland, in his reply, advocated conservative surgery when dealing with comminuted fractures.

ROYAL INSTITUTION.—Professor C. S. Sherrington, M.D., F.R.S., the new Fullerian Professor of Physiology at the Royal Institution, will deliver a course of six lectures at the institution on Muscle in the Service of Nerve, at 3 P.M., on Tuesdays, Jan. 19th and 26th, and Feb. 2nd, 9th, 16th, and 23rd, 1915.

LADY MINTO'S INDIAN NURSING ASSOCIATION.—In the annual report of this association, dated Nov. 23rd, attention is called to the difficulty in obtaining trained nurses for the work in India. The majority of the nurses who had been selected for service with the association afterwards withdrew their names and joined various bodies for tending the sick and wounded in connexion with the war. Reference is also made to the urgent need for funds owing to the falling off in subscriptions. The address of the association is 91, York-street, Westminster, S.W.

Reviews and Notices of Books.

Diseases of the Stomach.

BY CHARLES G. STOCKTON, M.D. London: D. Appleton and Co. 1914. Pp. 774. 65 illustrations. Price 25*s.* net.

THIS book is written primarily for the use of general practitioners by a clinician who has had long experience as a keen observer of the diseases of which he treats. To make it more comprehensive he has obtained the aid of various authorities on pathology, laboratory methods, radiography, and physical methods of treatment. In his introductory chapter he discusses the position of the "internist" (a term which the author employs to denote the specialist whose province is the gastro-intestinal tract) who should share with the general practitioner the domain of the diseases of the stomach. He rightly describes as nihilistic the view that gastric digestion is unimportant and unnecessary—a view which we think is the result of the technical skill that has been attained by the modern surgeon and the experimental physiologist. After reading his introduction we agree that the surgeon and the morbid anatomist see only few of the diseases of the stomach, and then but the advanced stages of disease. The study of diseases of digestion includes not only organic disturbances, but the far more frequent functional disturbances, and must fall into the special province of the general practitioner and the "internist."

In the earlier chapters are discussed the anatomy and physiology of the stomach and methods of examination. Amongst these we note special descriptions of the "string test," together with duodenal alimentation, a method which the author's own observations lead him to conclude to be of some value in curing cases which otherwise would require surgical relief. We do not think, however, that the method has been as yet widely introduced in this country. In the chapter on radiography there are some useful diagrams from actual photographs. He deals fully with dyspepsia, but points out rightly that the modern attempt to classify such cases on a basis of some special manifestation of gastric disturbance, such as the variation in secretion or in motility, is in practice not feasible, although occasionally there may be such a dominant feature. Discussing the various theories that have held sway concerning the cause of dyspepsia, he comes to the conclusion that symptoms almost identical may be induced by disturbance of the nervous system, by auto-intoxication, by metabolic failure, or by gastritis, and he discusses these in detail.

There is some truth in the adverse comment on the practice of exploring the abdomen for the purpose of diagnosis and the removal of the appendix as a routine procedure, or even, if this fails, draining the gall-bladder. A large variety of dyspepsias are discussed under the headings of clinical manifestations, such as eyestrain, disturbance of special senses, and diathesis. The chapters on peptic ulcer are specially worthy of note and include various prescriptions and general methods of treatment. Dealing with gastroptosis the author illustrates fully the physical methods of treating such. In addition to all the ordinary diseases usually dealt with he devotes a chapter to syphilis of the stomach and another to arteriosclerosis involving the vessels of the stomach, with illustrative cases;

then vomiting, abdominal pain, and tenderness are discussed in detail. He also has a special chapter on the œsophagus, and concludes with a brief account of alimentation. We note on page 45 what is evidently a misprint, where it is stated that five or ten *minutes* elapse between the two deglutition sounds heard on auscultation.

The book is good and up-to-date, and we can safely say that the material dealt with has been put forth in an unbiassed fashion which will appeal to both the general practitioner and the specialist.

Outlines of Chordate Development.

By WILLIAM E. KELLICOTT, Professor of Biology in Goucher College. London: Constable and Co., Limited; New York: Henry Holt and Co. 1914. Pp. 471. Price 10*s.* 6*d.* net.

THIS volume may be taken as the natural sequence and corollary to that on general embryology, and in it the student is introduced to the study of chordate development through the embryological history of amphioxus, as it affords, in simple diagrammatic style, the essentials of early chordate ontogeny.

The whole development of amphioxus falls into four general periods: 1. Production of the germ cells, including oögenesis and spermatogenesis and spawning. 2. Embryonic period, from fertilisation to the opening of the mouth—a very rapid phase, occupying about 36 hours at normal seasonal temperatures of the water. 3. Larval period, from the opening of the mouth to the cessation of pelagic life and the assumption of a burrowing habit—a period about three months—during which the parts marked out in stage 2 are further elaborated. The larva is then about 3·5 mm. long. 4. Adolescent period from stage 3, or the "critical stage," to sexual maturity, a period marked by histological differentiation and the gradual appearance of adult characteristics. Each period is described with ample detail. Following this is a rather full account—166 pages—of the early and later development of the frog, the latter dealing with organology. The frog is important zoologically, not as a central type of any large group of chordates, but as a transitional form connecting the lower and higher groups of craniata. The account is admirably clear, and does not err on the side of giving too many details.

In discussing the development of the chick, first the embryonic membranes and appendages are considered and then the organology. These chapters are relatively brief, and emphasis is laid on the embryonic membranes, and upon the early phases of development which represent the most frequent modifications of the type of chordate development. This is an admirable and attractive exposition of the subject, while the numerous and carefully drawn illustrations greatly help to elucidate the chief morphological changes. The final chapter on the mammals includes only those phases of development that are of chief interest to the general student—e.g., the earlier stages in the formation of the embryo, the establishment of its relations through the placenta with the maternal organism, the development of the embryonic membranes and appendages, and also the development of the external form of the human embryo.

This treatise on chordate development is as lucid, succinct, and attractive as that on general embryology, and both works should prove most valuable to students of the fascinating subjects with which they deal.

LIBRARY TABLE.

A Text-book of Organic Chemistry. By A. F. HOLLEMAN, Ph.D., F.R.A. Amst., Professor ordinarius in the University of Amsterdam. Edited by A. JAMIESON WALKER, Ph.D. Heidelberg, assisted by OWEN E. MOTT, Ph.D. Heidelberg, with the coöperation of the author. Fourth English edition, partly rewritten. London: Chapman and Hall. 1914. Pp. 622. Price 10*s.* 6*d.* net.—The favourable reception of this book is evidenced in the issue of a fourth edition within ten years of its first publication. In previous notices we anticipated its success owing to its clear presentation of both facts and principles and to the intelligible system of classification adopted. The book has received careful revision, necessitated by the advances made, chiefly in the application in organic chemistry of physico-chemical methods, while the section on tautomerism has been entirely rewritten, and that on the benzene derivatives rearranged. It is a trustworthy book, and whilst dealing with a great and complicated subject keeps well within the bounds of a text-book.

Mediterranean Winter Resorts. By EUSTACE REYNOLDS-BALL, F.R.G.S. Vols. I. and II., bound together. Seventh edition. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1914. Pp. 635. Price 5*s.* net.—This guide-book to the principal health and pleasure resorts on the shores of the Mediterranean appeals not only to the pleasure-seeker but also to the invalid. To this end it contains special articles written by resident English physicians on the principal invalid stations. Vol. I. covers only the northern shores of the midland sea, the French, Italian, and Levantine Rivieras, South Italy and Sicily, and Southern Spain. First a series of travel routes is given. Then come descriptions of the principal resorts under the above sections, followed in each case by practical details as to hotels, cafés, restaurants, golf-links, places of entertainment, churches, hospitals, banks, conveyances, and a directory of English doctors, dentists, and chemists, with much other useful information. Vol. II. covers on a similar plan Morocco, Algeria, Egypt, and the Mediterranean islands. Each volume has a substantial index, and appendices include the list of members of the Anglo-American Continental Medical Society, legal notes, hints for winter residents, notes on winter in the West Indies, and India as a winter resort.

Medical Nursing. By A. S. WOODWARK, M.D., B.S. Lond., &c. London: Edward Arnold. 1914. Pp. 324. With 68 illustrations. Price 4*s.* 6*d.* net.—This is a useful little book, containing all the information needed by a nurse in regard to the illnesses from which her patients may be suffering. The instructions are clear and precise, there is no verbiage, and the illustrations are good and sufficient. That, however, on p. 18, showing the proper way of raising a patient, does not give the position of the arms correctly, and is not according to the (correct) instructions in the text. Antiseptics are not accurately defined either on p. 32 or on p. 79. Is not "the juice of half a lemon" rather a large quantity to take with each dose of, say, cod-liver oil? Our last criticism is that a bunion is not a corn (p. 270). On the whole the book fulfils its purpose very well.

Ueber den Mechanismus der Oxydationsvorgänge im Tierorganismus. Von Dr. med. LINA STERN, Privatdozent der Physiologie an der Universität Genf. Mit 12 Abbildungen in text. Jena: Gustav

Fischer. 1914. Pp. 61. Price 2.20 marks.—This is a lecture that was delivered in Berlin in 1913, and it contains the results of investigations by the author and Professor Battelli on the oxidation processes in the organism. It is divided into two parts, of which the first deals with the now well-recognised oxidases, such as the alcohol, uric acid, xanthin, tyrosin, and phenol oxidates. Next, what are called "oxidones" are dealt with. These are insoluble catalysers which are present in animal tissues and which possess the property of accelerating oxidation in different substances. The second part deals in an attractive manner with the respiration of the tissues, or what is called "internal respiration." This is a useful and suggestive lecture on an obscure but all-important chemical problem.

JOURNALS AND MAGAZINES.

The American Journal of Tropical Diseases and Preventive Medicine, Vol. II., No. 4.—This number opens with an editorial by Dr. Isadore Dyer on the cause of pellagra, in which it is stated that "the number of cases now in the United States and the number of deaths that result from the disease each year is simply appalling." The two main views as to the origin of the malady are discussed—namely, whether it is a deficiency disease associated with a faulty dietary or a specific infection due to a micro-organism. Some account is given of experiments on monkeys, the results of which, however, have been hitherto inconclusive. There are five original articles, the first of which is on the propagation of amœbic dysentery in animals and the recognition and reproduction in animals of atypical forms of the disease, written jointly by Dr. A. W. Sellards and Dr. W. A. Baetjer. It is said that the inoculation of infective material from virulent, and also from distinctly avirulent, cases of amœbic dysentery directly into the cæcum of kittens has given practically 100 per cent. of infections as compared with the usual result of about 50 per cent. of positive infections when virulent material is fed or injected per rectum. Major Weston F. Chamberlain, of the Medical Corps of the United States Army, contributes a paper, with illustrative plates, on spirochætæ and fusiform bacilli in various lesions in the Philippines. A further note upon the occurrence of endamœbæ mortinatalium as a human parasite is supplied jointly by Dr. A. J. Smith and Dr. F. D. Weidman, from the laboratories of pathology in the Medical School of the University of Pennsylvania. Dr. H. Windsor Wade and Dr. Houston L. Staring of New Orleans contribute an article on bubonic plague, with details of the study of a typical case which occurred during the recent outbreak in that city. Tuberculosis in tropical countries, and the necessity for greater effort to prevent it, are discussed by Dr. Isaac W. Brewer. "Mal de bocha," or tropical infectious stomatitis, is the subject of a contribution by Dr. Nathan Barlow, based on his experience of the disease in Northern Mexico. This affection is apparently transmitted by direct or indirect contact, and Dr. Barlow regards a rather delicate spirochæta as the most probable cause. The usual notes and comments, with reviews of current literature, complete an interesting number of the journal.

The British Dental Journal.—The issue of Dec. 1st of this journal contains a paper by Mr. John Humphreys on the Evolution of the Human Dentition. He traces the development of tooth forms through the various geological periods, discussing in detail the primates. Reference is made to the teeth of prehistoric man, and he states that "at the end of its long period of evolution the human dentition has almost returned to the point from which it started and reverted towards the primitive anthropoid arrangement as in parapithecus." There are two presidential addresses, the one by Mr. W. de C. Prideaux dealing with the antiquarian beauties of the county of Dorset.

ERRATUM.—In the review in THE LANCET for Dec. 5th, p. 1306, of Dr. Arthur Thomson's book, the title was erroneously given as "Outlines of Biology." It should have been "Outlines of Zoology."

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

(1) URODONAL; (2) FILUDINE; (3) JUBOL; AND (4) GLOBEOL.

(J. L. CHATELAIN, PARIS. LONDON AGENTS: HEPPELL AND CO., 164, PICCADILLY, W.)

WE have received four interesting pharmaceutical products from the laboratories of M. Chatelain, Paris. 1. Urodonal is described in many clinical accounts as an effective solvent of uric acid, and accordingly it is regarded favourably in the treatment of arthritis, rheumatism, and uric acid troubles. It is a combination of three definite compounds, each of which is a recognised solvent of uric acid. They are methyl-glyoxalidine, quinate of diethylenediamine, and hexamethylenetetramine. The preparation occurs in an attractive granular effervescing form. 2. Primarily, the formula of filudine is designed for the treatment of hepatic disorder and in addition to thiocinnamate of caffeine contains liver and spleen extracts. These latter are claimed to stimulate the functions of the liver and more particularly its antitoxic activity. It has thus been employed in cirrhosis, hepatic colic, and diabetes. It has been used also in malaria. The formula is an interesting one and, organic extracts apart, cinnamic compounds are known to increase the supply of red corpuscles in the blood. 3. Jubol is also an interesting formula containing as a basis agar-agar with biliary extract and also extracts of the intestinal glands. It is regarded as a means for the rational treatment of intestinal stasis. It has been used, it is said, with excellent results in the treatment of muco-colitis, its action being certain but mild and unirritating. 4. Our examination of globeol pills confirmed the statement in regard to their novel composition. When extracted with cold water a fluid was obtained which showed the hæmoglobin spectrum. The solution coagulated on boiling, and small though definite quantities of iron and manganese were found. The formula is put forward as of value in the treatment of anæmia and neurasthenia.

TONALKA APERIENT WATER.

(IDRIS AND CO., LIMITED, PRATT-STREET, CAMDEN TOWN, LONDON, N.W.)

The composition of this water resembles that of certain well-known natural bitter purgative waters. There were present the sulphates of sodium and magnesium with some common salt and a small quantity of carbonate of soda. The total saline constituents amounted to 54·04 grammes per litre. According to our analysis these were made up as follows: sodium sulphate, 33·40 grammes; magnesium sulphate, 16·88 grammes; sodium chloride, 3·46 grammes; and carbonate of soda, 0·30 gramme. The therapeutic action of the water will be understood from this analysis. It serves as a mild and efficient purgative.

LUTROL.

(CORBYN, STACEY, AND CO., LIMITED, 673, COMMERCIAL-ROAD EAST, LONDON, E.)

Lutrol is an efficient antiseptic and detergent, being composed of a neutral soap and cresylic acid. The ingredients are carefully balanced so as to

preserve a fluid without corrosive properties. We decomposed the preparation separating the soap from the cresols, and there were thus liberated exactly 50 per cent. of cresylic acid. It is, of course, well adapted for cleansing and sterilising work in surgical practice, and gives a clear solution diluted with water.

(1) URASEPTINE; (2) MERSALV; (3) IODEOL; AND (4) IODARGOL.

(M. BRESILLON AND CO., GAMAGE BUILDINGS, HOLBORN, LONDON, E.C.)

1. Uraseptine is, as its name implies, a urinary antiseptic, it is made up in a granulated form. The therapeutic constituents present are piperazine, urotropine, helmitol, and the benzoates of sodium and lithium. The presence of these latter is important in rendering the urine acid by the action of which urotropine or hexamethylenetetramine yields formaldehyde. 2. Mersalv is an ointment containing 10 per cent. metallic mercury amalgamated with a non-fatty but oily basis in a very finely distributed metallic state. It is prepared for the treatment of syphilis with mercury by the inunction method. 3. Iodeol preparations in various forms have for their basis colloidal chemical iodine and form an effective method of administering this element. Iodeol is prepared by suspending colloidol iodine in sterilised olive oil. It is used as an intramuscular injection, while another preparation (4), known as Iodargol, a viscid mixture containing colloidol iodine, is used for injection into the urethra. It is enclosed in ampoules and a special syringe is provided for the purpose.

LAGER BEER.

(THE PHŒNIX TRADING CO., 14B, GREAT MARLBOROUGH-STREET, LONDON, W.)

Two varieties of lager beer were examined, the one being light in colour and the other dark brown. They both showed the same alcoholic strength. The complete analysis of the light beer was as follows: alcohol by volume, 5·00 per cent.; malt extractives, 5·78 per cent.; volatile acidity reckoned as acetic acid, 0·09 per cent.; lactic acid, 0·25 per cent.; malt sugar, 1·04 per cent.; and mineral matters, 0·24 per cent. The analysis of the brown beer was as follows: alcohol by volume, 5·00 per cent.; malt extractives, 5·89 per cent.; mineral matters, 0·19 per cent.; volatile acidity reckoned as acetic acid, 0·09 per cent.; lactic acid, 0·22 per cent.; and malt sugar, 1·08 per cent. It will be seen that there is a general resemblance of composition between the two beers. They are both quite light alcoholic beers, and contain further a minimum of sugar. They have a flavour which may be described as "dry." We searched for objectionable preservatives, but without success.

New Inventions.

AN IMPROVED (DOYEN'S) MOUTH GAG.

Doyen's gag has some good points, or it would not be in general use; yet it also has bad ones, which I will enumerate thus: 1. The jaw of the instrument which happens to be upwards usually presses against the palate when the mouth is widely opened; this causes pain and occasionally injury. 2. The lower lip of the patient is liable to be caught between the incisor teeth and the lower jaw of the gag; this also causes pain and injury. Sometimes the patient suffers more from damage thus caused than from the surgical operation. 3. The milled head of the joint-screw projects to such an extent as to prevent close contact of the rubber face-piece (of the anæsthetist's apparatus) with the patient's cheek; this allows of the escape of gas or ether and consequently delays proceedings. 4. When the gag is widely opened the end of the rachet comes so close to the patient's mouth that it (like the milled screw-head) is liable to cause an escape of the anæsthetic; further, its shape

renders it liable to tear the thin rubber air cushion of the face-piece. 5. The sharp saw-like rachet is quite exposed; consequently, when in order to remove the gag this rachet is released it is liable, through contraction of the stretched muscles of the patient's jaw, to be driven forcibly backwards and so lacerate the anæsthetist's finger, just as a saw would if drawn across it. Two practitioners have informed me that they have thus suffered. 6. The spring is forged solid with the rachet and occasionally breaks. This entails several days' deprivation of the use of the instrument while it is being repaired, and a cost of about 10*s*.

In the opinion of two anæsthetists who have used it the disadvantages referred to above have been overcome in the gag illustrated here. It was made to my designs by Messrs. Mayer and Meltzer, of Great Portland-street, London, W.

CHARLES J. HEATH, F.R.C.S. Eng.,
Late Surgeon, Hospital for Diseases of the Throat, Golden-square, W.
Devonshire-place, W.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—A meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., to-day (Friday, Dec. 18th), at 8.30 P.M., when a paper (illustrated by slides) entitled, "Tropical Problems in the New World," will be read by Dr. Andrew Balfour, C.M.G.

CIVIL AND MILITARY SANITATION IN THE TROPICS.—The second Chadwick public lecture was delivered by Sir Ronald Ross, K.C.B., F.R.S., at the London School of Economics on Dec. 11th. The lecturer first asked how far it was advisable or necessary for governments to develop sanitation, and pointed out that as a matter of fact sanitation could not be conducted by private individuals themselves, and must require the coöperated efforts of the authorities. The second question was what modifications in the ordinary apparatus of free government were demanded for sanitation; and the lecturer urged that it was unwise to bestow complete liberty of action as regards sanitation on very small municipal governments. He maintained that where the death-rate of such municipalities was above the average they should be called to account by superior governments, as had actually been done in the case of one municipality in the empire. His view was that very small municipalities, however desirous they might be to advance sanitation, seldom possessed enough men with sufficient knowledge of town management and hygiene to conduct these branches of administration with success. The third question was whether Government should develop research; and this, he said, was already answered by the Colonial Office and the India Office in the affirmative. Lastly, he pointed out that the head of every sanitary administration should be placed upon a footing equal to that of the head of every other great department, and should, if possible, be always given a seat on the local executive council. The next course of lectures will be given by Dr. F. M. Sandwith on War and Disease at the Royal Society of Arts on Jan. 15th, 22nd, and 29th at 5.15 P.M.

THE LANCET.

LONDON: SATURDAY, DECEMBER 19, 1914.

The Treatment of Wounds in War.

IN recent issues of THE LANCET we have printed some important communications on the treatment of the wounded in war, which originated in an address delivered before the Medical Society of London by Sir WATSON CHEYNE;[1] this week we are able to publish a contribution to the discussion from Sir ANTHONY BOWLBY which derives its great interest from the presence of the author with the Expeditionary Force as consulting surgeon. Broadly speaking, the question as promulgated at the Medical Society resolved itself into a debate as to what should be done to a recent wound in which septic germs have become lodged. Is it sufficient for us to prevent the access of further organisms by the application of an aseptic dressing, trusting to the *vis medicatrix naturæ* or the resistance of the tissues to deal with those germs which have already been admitted, or shall we endeavour by the use of antiseptic substances to destroy the invading organisms before they have time to penetrate the tissues bordering on the wound? This is no new question. It is that which presented itself to LISTER some 50 years ago, and it is that which he answered from the standpoint of knowledge then reached by his antiseptic treatment. When he recognised that the cause of suppuration in wounds was the presence of micro-organisms he endeavoured to destroy them by the application of crude carbolic acid, and the success of his endeavour demonstrated that it was possible at an early stage of the infection of a wound to remove the invading germs by chemical means. His first case[2] was one of compound fracture, a form of lesion which had up to that time been always followed by prolonged suppuration and severe septic symptoms. After the application of the carbolic acid the wound healed without suppuration and all signs of general sepsis were absent. This method of dealing with wounds, somewhat modified by its introducer as his experience widened, was employed by him during the whole of his active professional life, and it was followed with remarkable success by other surgeons throughout the world. Gradually, however, the idea arose that such a strenuous treatment of a wound must do great harm to the surrounding living tissues. The evidence in favour of this damage was by no means great, and the objection to the use of antiseptics in the wound was almost completely based on theory. The advocates of the aseptic method relied on theoretical considerations; it must be, they contended, harmful to pour a strong solution of carbolic acid into a wound, for the damage to the living tissues may be quite substantial.

Sir ANTHONY BOWLBY'S letter supports the arguments employed by Sir WATSON CHEYNE, who advocated the maintenance of the Listerian methods in fitting circumstances, in a remarkably direct way. Of his experiences with the army Sir ANTHONY BOWLBY draws a picture which shows convincingly that it is upon antiseptic procedure much as LISTER laid down its principles that the treatment of wounds in war must depend. No one doubts that in the case of a deliberate wound made after the taking of elaborate precautions by an operating surgeon there is no need to employ antiseptics, for with care it is possible to keep the wound free from germs. But the case is utterly different when we have to deal with wounds which have already become infected. Here it is not possible with the very greatest care to prevent the multiplication of the germs which have already entered the wound and the absorption of these germs or their products. The application of an aseptic dressing over the wound will not and cannot affect the septic process going on within. When the wounded fighting man is seen within a few hours of the infliction of the injury it may be and often is possible to render the wound aseptic. In such cases the septic organisms are there; but they can be antagonised, and they may be overcome. And how seldom it happens that in war the wounds of the sufferer can be seen within a few hours; how frequently the soldier having incurred an injury of the sort most apt for sepsis abides long hours in an environment reeking with infection. We may all of us have known the tragic truth that no amount of forethought, skill, or devotion could spare our defenders these terrible risks, but Sir ANTHONY BOWLBY'S simple forcible description of the conditions must make this more real to us than ever. "There seems to be an idea," he says, "that 'aseptic' surgery has been practised at the front, but as far as the clearing stations are concerned, this is entirely a misapprehension. I have myself never given up 'antiseptic' principles and treatment, and I was glad to find that in every clearing hospital antiseptics were always used." And he shows that the usual treatment must be in accordance with the Listerian routine.

As a matter of fact the separation of surgery into the completely aseptic and the completely antiseptic is rather academic. In spite of its disdain for chemical antiseptics modern aseptic surgery has not hesitated to employ a solution of iodine to sterilise the skin preparatory to surgical operations; but when we hear of wounds in action being treated by painting the skin with iodine and by applying an aseptic dressing, while nothing is done to the

[1] THE LANCET, Nov. 21st (pp. 1185, 1200) and 28th (p. 1248), 1914.
[2] THE LANCET, vol. i., 1867, p. 326, *et seq.*

wound itself, we cannot endorse the reasoning which underlies. This may be aseptic surgery, but it is not wise. The case is, indeed, different when many hours have elapsed since the infliction of the wound; then the germs have had time to penetrate deeply into the tissues forming the sides of the wound, so that an antiseptic cannot follow them. What shall be done in such cases? The essential elements in the treatment here are the removal of disintegrated structure where the circumstances point thereto, and the employment of adequate drainage. It may be asked whether the employment of an antiseptic in a wound never damages the tissues. Certainly this does happen, but the damage inflicted on the tissues by one application of even a very strong antiseptic will do little mischief, and what mischief is done is rapidly repaired by the tissues. What is really harmful is the repeated application of even weak antiseptics to healing tissues. Many who would shrink from applying a strong solution of carbolic acid to a recent wound will not hesitate to irrigate a wound day after day with antiseptic solutions which can do little more than serve to irritate the parts. Sir RICKMAN GODLEE prophesied recently that the time would come when some surgeon would rediscover Listerism. We cannot believe that such rediscovery will be necessary at any rate until our science takes some unforeseen step forward. As long as wars are conducted as at present Listerism will be the only sound method to follow in dealing with the wounded in the field. The pendulum has swung far in the opposite direction, but only to return. Sir RICKMAN GODLEE quoted recently LISTER'S saying that if he should ever write a book on surgery he would choose as its motto the words of Psalm xxxviii., "My wounds stink and are corrupt, because of my foolishness." Much unnecessary sepsis exists to-day in civil practice because of the unwise neglect of the teaching of LISTER. Sir ANTHONY BOWLBY'S vivid communication indicates how hopeless any other routine would be in military practice.

Quackery and a Ministry of Public Health.

THE Unqualified Practice Prevention Committee of the General Medical Council submitted recommendations at the recent meeting of the Council after it had considered the report of the Select Committee of the House of Commons on the subject of so-called patent medicines. These recommendations,[1] which were adopted by the Council, suggested that the approval of the Select Committee's report by the General Medical Council should be expressed under two headings. In the first place, there should be conveyed to the Lord President of the Privy Council an expression of the General Medical Council's complete agreement with the recommendations of the Select Committee; and in the second place there should be a representation to the Government, through the Lord President, of the necessity for the immediate creation of a Ministry of Public Health. It will be remembered that the Select Committee recommended that the administration of an improved, reconstructed, and coördinated law relating to the advertisement and sale of patent medicines should be entrusted to one department of State, and that this should be the "Ministry of Public Health, when such a department is created." The Select Committee considered the possibility of legislation to regulate the trade in patent medicines preceding the institution of a Ministry of Public Health, and suggested that the Local Government Board should undertake "meanwhile" the proposed departmental duties. The General Medical Council has now by resolution urged the desirability of proceeding first to create the department without waiting for this particular section of its probable future duties to be brought into being. This appears to be a wise and reasonable course, and it is to be hoped that the Government may be able to find the time and the occasion to carry into effect the advice of the representative body of the medical profession, charged with the standardising of our education and the proper maintenance of our statutory Register.

For the passage of controversial measures involving conflicting commercial interests there is not likely to be an early opportunity, and legislation on the subject of patent medicines will involve the disturbance of vested interests, whose representatives will certainly wish to secure a full hearing for their case, and to invoke protection wherever they can find it. At the present time a large number of Members of both Houses of Parliament are on active service, and are likely to remain so for many months—a fact which, combined with the other circumstances of a grave national position, renders it probable that only a very small amount of domestic legislation will be attempted in the near future. In the case of a large and flourishing trade, if not in most shapes a desirable one, no Bill affecting it is likely to be introduced at present, and neither the advocates of such a measure, nor its opponents, would wish to have it discussed under any unsuitable conditions. The formation of a Ministry of Public Health, however, is a different matter. It is not the result of a proposal made by the Select Committee on Patent Medicines, which has merely suggested the creation of certain duties for a State department, which naturally would be assigned to the Ministry of Public Health if it existed. It does not exist, but its creation has been asked for and desired for a long time by all interested in the national health and welfare. Incidentally it would be very convenient if, on the passing of a new law to regulate the trade in patent medicines, the department were there ready to carry it into effect, but the formation of the department has been urged upon other grounds. The formation

[1] THE LANCET, Dec. 5th, 1914, p. 1314.

of a new authority to supervise the carrying out of existing laws of great public importance, for which it would be specially adapted by its constitution and to which it would devote its undivided attention, cannot be deemed to be an innovation likely to create controversy or arouse opposition. The proposal should rather appeal to all anxious to promote business-like efficiency in matters of administration. Moreover, at this particular juncture questions of public health are arising out of conditions wholly abnormal, and which demand special attention and skilful handling. Huge camps of soldiers in training, and large bodies of recruits in towns and populous districts where no such incursions of population have been provided for, are a matter of grave concern for others besides the military authorities, and are not likely to become less so as winter progresses and as time goes on. Camps and other arrangements for the internment of aliens come into the same category, and meanwhile the civil population is deeply concerned in the maintenance of its public health. Soldiers returning from the front are not unlikely to develop infectious disease, and the general health of the nation during the coming year or years may not improbably be below the usual standard, though we may add that for various reasons the reverse may occur.

In devoting itself to the maintenance of the public health in spite of adverse conditions the medical profession, considerably depleted by the absence of so many of its members from their usual duties, is likely to have an anxious period and one of strenuous work before it. Its members, therefore, and particularly those to whom the public health is a matter of official solicitude, would assuredly welcome the assistance and coöperation of a strong Government department in sympathy with their aims, and able to give its whole attention to furthering them. It is a hopeful sign that a committee such as that which was appointed to consider the case of patent medicines should have appeared almost to assume general assent to the proposition that a Ministry of Public Health ought, and is likely to be created. It has certainly also recommended the institution of administrative duties which would require important additions to be made to the personnel of any existing department, and would increase the responsibilities of the department named by the committee in an inconvenient degree should they be thrust upon it. We hope, however, that no necessity for this will arise, and that the representation made by the General Medical Council will receive prompt and serious attention from a Government whose preoccupations we fully recognise and whose devotion to duty is increasing.

ENTERIC FEVER AT BARCELONA.—There is at present a severe epidemic of typhoid fever at Barcelona—more than 20,000 cases, at the rate of 200 to 300 cases a day. The cause is said to be a contaminated spring, which is the main source of the drinking water-supply of the town.

Annotations.

"Ne quid nimis."

THE MEDICAL DIRECTORY, 1915.

THE regular appearance of the annual "Medical Directory," published by Messrs. J. and A. Churchill, has long since established itself as an event of important utility on which not only medical men, but many other classes of people and public officials, have come to rely as a part of the machinery of affairs. The first thing that strikes us in the seventy-first annual edition, that for 1915, just to hand, is the thinness in bulk of the volume. Seeking the cause of this we find that the useful numerical summary of the profession, given yearly on p. 2, is limited this year to the medical profession "in the British Isles." This reaches a total of 36,656. The total in the summary last year was 41,972, and the explanation is found in the fact that the tabulation last year included members of the profession resident abroad. The title page next indicates that the directory of registered medical practitioners "resident abroad" is now contracted in scope to those "resident in Europe and North Africa." This section, which no longer contains an alphabetical list of names, but only a local list (with detailed mention, however), occupies only 13 pages, as against 205 pages in 1914, which accounts in large part for the fact that the total number of pages in the Directory is only 1923, as against 2159 last year. Naturally in the present condition of affairs we can understand that Austria, Hungary, Germany, and Turkey are omitted. Probably in no case is any British medical man who may unfortunately happen to have remained in those countries able or even permitted to practise his profession. But what is of far greater importance is the omission of the large number of names in Asia, South, West, East and Central Africa, the American continents and adjacent islands, and Australia, the local lists of which in the Directory for 1914 occupied 22 out of the 23 pages in the local list of practitioners resident abroad. While making every allowance for the present cataclysmic state of affairs, with the inevitable permanent changes that must ultimately ensue, we earnestly hope that the missing portion will be restored next year, and that the editors will address themselves at once to that task. From some correspondence that appeared in our columns in the autumn of 1913 it is evident that efforts were then in contemplation to find a means of reducing the bulk of the Directory; but any attempt to effect this end by materially contracting its sphere of utility we feel convinced will be suicidal. The medical profession has long been proud of the complete and accurate service rendered to it by Churchill's "Medical Directory," and anything that would imperil its usefulness would be greatly deplored.

THE PROTECTION OF DRINKING-WATER SUPPLIES ON RAILWAYS.

THE extension of facilities for dining and sleeping on railway journeys has brought into increased importance the supply of pure water to restaurant and other cars. This matter is naturally of greater importance in America than it is with us owing to larger quantities of water drunk usually by the

American; and since the distances travelled are so great there is considerable probability that on any journey the supply will be renewed from several different sources, some of which may be of doubtful quality and many not under any sanitary control. The danger anticipated from this source has led to the appointment of a very strong commission by the American Treasury, which has fixed a bacteriological standard for the drinking-water supplied by common carriers in inter-state commerce.[1] The fixing of bacteriological standards of purity, or rather, as is pointed out by the commission, of permissible impurity, is more readily accepted in America than with us, as here we rely chiefly on sanitary control and inspection to attain the same ends. A very reasonable standard has been suggested and adopted, based on the number of organisms developing on agar at 37° C. in 24 hours, and on the absence of B. coli in at least four out of five 10 c.c. samples. Since the control or its enforcement rests ultimately on a legal basis it is satisfactory to find that the standard to be adopted, the methods to be employed in its determination, and the organism which for legal purposes is to be regarded as B. coli are all accurately defined. In these respects the report is instructive. In England there is no excuse for the use by any railway company of water from a polluted or uninspected source, and it is practically always drawn from a public water-supply. This does not, however, exclude danger from contamination during storage, and the publication of the report of the American commission may be of service in directing attention to this question of the purity of the water supplied by our railway companies.

A SUBJECT OF ARTIFICIAL PNEUMOTHORAX IN THE FIGHTING LINE.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 30th M. E. Rist showed a man the subject of artificial pneumothorax who had taken part in the war. The case was remarkable not only as evidence of the value of a method of treatment of pulmonary tuberculosis which has rapidly gained in favour in recent years, but of the spirit which animates our gallant allies. The patient was a man, aged 28 years, who was by occupation a translator. In September, 1913, tuberculosis suddenly manifested itself by repeated and profuse hæmoptysis, fever, nocturnal sweats, and a loss in weight of 5 to 6 kilogrammes in a few weeks. He was admitted into hospital under the care of M. Léon Bernard, who found that there was already a cavity in the upper lobe of the right lung. The disease was therefore of a severe and rapid type. In October pneumothorax was induced. The result was excellent; the fever and hæmoptysis disappeared and weight was gained. After six weeks the patient went to the country for three months. On his return he was able to resume his occupation provided he submitted to insufflation of nitrogen every fortnight. When war was declared he joined the infantry regiment to which he belonged, and came to hospital for a final insufflation. For the first time a little pleural effusion was found to accompany the pneumothorax. On August 4th he was at Quesnoy. On the 10th he marched to Avesnes, a distance of 15 kilometres, from which he went to Lille. On the 20th he marched 53 kilometres to Béthune, with a two hours' halt at La Bassée. Two days later he marched by night to Arras, a distance of 20 kilometres. On the 27th he marched to Doullens, a distance of 16 kilometres. He was then very fatigued. Nevertheless he was in the open air all night. On the 28th he was in the fighting line in contact with the enemy and fired 32 shots, but a rapid retreat exhausted him, and after 50 minutes he fell down and was taken to hospital. On Sept. 14th he returned to Paris, and after five days' rest was able to resume his work. On Oct. 15th he came to hospital, where the pneumothorax was found to be perfectly preserved at a pressure of 3 centimetres of water. This relatively elevated pressure was due to an increase of the effusion. Aspiration was performed, a litre and a half of citrine fluid was withdrawn, and nitrogen was insufflated. At the time of the report the patient was robust, had no fever, and neither coughed nor expectorated. It would seem from the evidence supplied by this case that artificial pneumothorax enabled a man who had been severely attacked with tuberculosis to engage in the campaign for a month under arduous conditions and to regain his health afterwards.

[1] Bacteriological Standard for Drinking-water, Public Health Reports, vol. xxix., p. 2969, Washington, 1914.

SYPHILIS THE UBIQUITOUS.

IN former days, while the path of the infective agent of syphilis, as well as the identity of that agent itself, was still matter for conjecture rather than certain knowledge, there was much temptation to make a pathological process which seemed so subterranean in its ways responsible for many of the lesions whose origin was shrouded in mystery. To-day the field available for such speculation has been encroached upon and limited from several directions. Many of the mysteries of pathology have been made plain, the probability or otherwise of a syphilitic factor has become a much more sharply assessible quantity, and specific tests for that factor have become available. Among these tests the Wassermann reaction has taken the chief place, and it is this that Dr. Leonard Findlay and Dr. Madge Robertson[1] have applied to certain diseases in which they suspected a luetic element. They employed the Glasgow technique devised by Browning and quote figures which lend strong support to their advocacy of this method. Even so, however, they do not claim that it is absolutely accurate, and constitutes a sharp dividing line between syphilis and not syphilis; they recognise a borderland of cases in which the test yields indeterminate results even when it is repeated several times. One of the lesions that have been examined from this point of view is eczema oris as seen in children. Thirty-three such cases have been tested serologically, and a positive reaction has been obtained in every one, either in the patient's own blood or in one of his near relatives. Again, 11 cases of congenital heart disease have been similarly tested, with almost the same result; in 7 of the children the serum reacted positively, while in 2 others that of one or other of the parents did so. In 33 cases of spastic diplegia the results were less decisive, but here there were 13 positive cases and 2 doubtful ones. Finally, a series of 22 mentally deficient and epileptic children included no less than 13 positive and 2 doubtful results. In neither of these two latter groups was it possible to discover any clinical

[1] Glasgow Medical Journal, December, 1914.

difference between the syphilitic and the non-syphilitic cases. In estimating the importance of these findings it should not be forgotten that the presence of a positive Wassermann test in the serum of an individual does not necessarily prove that every symptom of disease from which that person is suffering is due to a lesion of syphilitic origin. The class of child whose parents are syphilitic is closely coincident with the class in which mental deficiency is likely to be rife, and it is possible that if there were a test available coincidences with other infections than syphilis might be worked out. Nevertheless the work of Dr. Findlay and Dr. Robertson is both stimulating and suggestive, and might with advantage be applied to other childhood diseases of obscure origin. It should be noted that in many of their positive cases the children presented no clinical stigmata of syphilis.

MEDICAL WOMEN FOR THE COMING SHORTAGE IN THE MEDICAL PROFESSION.

THE inevitable shortage of medical men which is resulting, and will for a considerable time continue to result, from the war affords matter for careful prevision. The great number of medical men who have already forsaken their civil sphere of activity for military service has already had its effect on hospital staffs, the various civil administrative medical staffs, and private practice. Moreover, there is little prospect that the toll will cease for some years to come. The wastage of war among those already engaged in military service will call for repeated drafts which also will become larger as the military medical establishment rises in numbers. The continuance of war will certainly withdraw a considerable number of young men from the medical, as from other, careers. With these considerations in view, the suggestion has been advanced in the *Times* by Dr. Mary Scharlieb that women of education and ability should turn their eyes to the medical profession, at least as an emergency measure, for, as she points out, women medical students need not of necessity be very young. Against the greater quickness of verbal memory and the superior plasticity of the very young Dr. Scharlieb insists that the trained mind, experience of life, and *savoir faire* of the more mature woman constitute an important set-off. The missionary field offers a special career for women also, while the fact that there are now several hospitals officered entirely by women in the theatre of war doing admittedly creditable and highly appreciated work amply demonstrates that there are many women at any rate who are quite equal to the strenuous demands of a medical career. Dr. Scharlieb's own experience of nearly 40 years justifies her in expressing the opinion that a medical career is capable of offering to a suitable woman candidate great happiness and satisfaction, combined with valuable opportunities for practical usefulness. We publish this week a letter signed by the President, Chairman, Dean, and Honorary Secretary of the London (Royal Free Hospital) School of Medicine for Women which coincides with Dr. Scharlieb's views, and forms a powerful appeal for the substantial endowment of an admirable institution. The school thoroughly deserves all the help that it seeks, alike for its past record and its future prospects.

WE regret to announce the sudden death of Professor A. van Gehuchten, professor of anatomy and neuropathology in the University of Louvain, which took place last week at Cambridge, where he was the guest of the University.

THE library and offices of the Royal Society of Medicine will be closed for the Christmas holidays from Thursday, Dec. 24th, to Monday, Dec. 28th, both days inclusive.

OWING to continued ill-health Dr. E. F. Bashford has been obliged to hand in to the executive committee his resignation of the post of General Superintendent of the Imperial Cancer Research Fund, and his resignation has been accepted.

THE TREATMENT OF WOUNDS IN WAR.

BY SIR ANTHONY A. BOWLBY, C.M.G.,
COLONEL, ARMY MEDICAL SERVICE; CONSULTING SURGEON TO THE EXPEDITIONARY FORCE.

General Headquarters, Expeditionary Force,
Nov. 30th, 1914.

WITH the Editor's permission I should like to join in the discussion opened by Sir Watson Cheyne at the recent meeting of the Medical Society on "The Treatment of Wounds in War,"[1] and I do so because for the last six weeks I have seen these wounds under different conditions from those in which they have been seen by the surgeons who took part in the debate. I spent my first three weeks in France at the base hospital at Rouen, but ever since the beginning of the "Battle of Ypres" I have been in daily attendance in one or other of the "clearing hospitals," or "clearing stations," as they are now to be called, to which the wounded are brought after being dressed in the field ambulances. They often arrive within a few hours of injury, but more frequently after a longer interval of 12 to 18 hours, and more rarely only after the lapse of one or two days. It must be remembered that in this war there is never an armistice for the burial of the dead or for the relief of the wounded, and it is usually only at night that our "stretcher-bearers" can remove men who cannot walk to the field ambulance. On the other hand, the motor ambulances cannot usually take the wounded on to the clearing hospitals by night because they would draw fire if they showed lights, and because the roads are almost impassable even by the light of day. The conditions of a field ambulance receiving many wounded at night quite preclude anything except the simplest dressings, or operations of urgency, and consequently nothing much is attempted before the day dawns. Soon after this the patients begin to be removed to the clearing hospitals. Men who are shot in our own attacks may lie outside our lines unaided even for days, for our own stretcher-bearers would be shot at once if they went out towards the German lines to help either British or German.

It must next be remembered that it has been the very worst cases—namely, the fractures of the femur and the leg bones, as well as the head and spine cases, and big shell wounds—which have been most delayed in getting to the field ambulances. For those men who were hit in the arms, or had slight flesh wounds, could get away with or without help in many instances, while these could not be moved without stretchers and bearers. And, in addition, again because they were so disabled, they have unavoidably been left lying in

[1] THE LANCET, Nov. 21st, 1914, pp. 1185, 1200.

the wet mud of manured fields till their torn trousers and their wounds were so soaked in a mixture of blood and dirt that it was impossible even to get the torn muscles mechanically clean, let alone aseptic. In many cases also men have lost so much blood that they could not stand an operation on the chance of further loss by opening up wounds, and there is no doubt that their powers of resistance to microbic infection are in many cases greatly lowered by the combined effects of shock from the injury, from bleeding, and from exposure to cold and wet, with prolonged starvation. Such are the conditions in which many men are hit, and I will now turn to the nature of the wounds.

First, rifle bullet wounds. The wounds inflicted in this war differ most materially from those of the South African war in two essentials. In the first place, the bullet is a different one, and even at long range it hardly ever makes the very small punctures which the old Mauser bullet made. These small punctures were the indication of a correspondingly slight injury to the parts beneath, and so also the much larger wounds of exit and entrance of the new bullet indicate a correspondingly severe injury too. Both Mr. Makins and I are quite convinced that these bullet wounds are not comparable to the wounds of the Boer war, and I can further testify that the effects of our own bullet on the wounded Germans I have seen are also much more severe than were those of the Lee-Metford in 1900, though not so severe as the German missile. In the next place, it is well known that the Boers habitually fought at very long range, whereas here the exact contrary is the case. Most of the attacks on the British have been made at night, so that large masses of men could get close to the trenches before being seen, and instead of rifles being fired at from 800 to 1500 yards most of the rifle fire has been within 100 or 200 yards, while the great majority has been when the men were almost in contact or but few yards apart. The effect of this has been to cause the most typical "explosive effects," so that I have seen the greater part of the muscles of the forearm torn and extruded through a huge rent in the skin and fascia, and that without the bones being injured, in a case where a man was accidentally shot at a distance of three or four yards, and where there could be no possible doubt of the nature of the injury. Of course, in such cases where the bones are struck as well the effects are infinitely worse, and large portions of the muscles are rent and torn away with vessels and nerves, while parts of long bones are shot out and fractures extend over the whole length of the shaft. One might well believe that these injuries were due to shells, but I have had abundant evidence that these immense wounds have been caused in very large numbers when the men were so closely engaged in combat that all shell fire had ceased, and when there was consequently no doubt of their origin. Almost all the experiences of bullet wounds in the Boer war have been set at naught, and one never sees a clean hole bored through the patella as I saw six times in South Africa, or a bullet wound through the head whose entrance or exit was difficult to find. The bullet of the machine gun is the same as the rifle bullet.

Second, shell wounds. These of course are to be further divided into wounds by shrapnel bullets and wounds by fragments of the shell case. The effect of the shrapnel bullet varies in proportion to the height of the shell from the ground when it explodes and the velocity of the shell at the same moment. If a shell bursts when it has lost its velocity and is high in the air, the bullets also are quite spent and may fail to penetrate even the clothing. But if the shell bursts close to a man and when its velocity is very great, the bullets are projected with great force, and often many of them strike a single man. In this way whole limbs may be shattered or even torn off, and the viscera may be so injured that death is practically instantaneous. In intermediate cases the bullet penetrates with more or less velocity, and may in the latter case be deviated or stopped by a bone. These bullets are much more likely to carry into the wound portions of clothing than is the rifle bullet, and as their velocity and penetration are less they much more often lodge, otherwise they present no special points of interest. Portions of the shell case itself, or even the whole case, may strike a man, and the effect is the same as that caused by the howitzer shells.

A howitzer shell differs from shrapnel in that it contains no bullets, but only a bursting charge, and this charge usually is made to detonate when the shell strikes the ground. The wounds are therefore caused by the portions into which shell is shattered by the explosion, and while some of them may weigh several pounds, others may be smaller than a bullet. The wounds caused by these shells are the most horrible of all, and are much more often fatal than shrapnel wounds. The limb is often so violently contused by the mass of jagged metal tearing its way through all obstruction, that far beyond the actual wound the tissues are so injured that they slough in large masses. Immense rents are torn in the fascia and skin, and through these a mass of mangled muscles, fascia, and bone is thrust, much of which has its vessels so extensively destroyed that it is all dead from the moment of the injury. Such a wound presents a mass of slate-coloured or blackened tissue, from which blood-stained serum exudes, but which bleeds little. The whole limb in many cases is swollen by the extravasation of blood, which spreads far and wide along the intermuscular planes, and which by the tension it causes may yet further seriously interfere with the circulation of the limb as a whole. Large portions of clothing covered with mud are frequently thrust deep amongst the torn muscles, and gravel or soil may also be carried in by the shell.

Such, then, is a short description of the conditions in which the wounds are inflicted and the nature of the wounds themselves as seen soon after their infliction. I will now turn briefly to the question of the principles of treatment.

In the first place, it must be realised that the exigencies of war do not ordinarily permit of any equipment at clearing stations except that which can be easily removed at the shortest notice, and, as no tents or huts can be supplied, use has to be made of any available space or building. The accommodation will vary from a barn or a railway waiting-room to a town hall, or a church, or a school, or a college. But in the recent battle each clearing station had to divide its staff between several such places, as no one of them was large enough by itself. There may be no time whatever to prepare or clean such a building before the wounded begin to arrive, and there is seldom much time afterwards, while every wounded man and orderly adds to the mud on the floors. There are ordinarily no beds, and the patients lie on the stretchers on which they were carried in, but we have always

obtained in the towns some beds for each of the "stations." The clearing station is equipped to provide for 200 cases, but it will be some indication of the pressure if it is realised that a single station has on several occasions dressed in 24 hours more than 1000 wounded.

It is seldom possible to remove all their blood- and mud-stained uniform from the soldiers because there is but little to take its place, and in fractures of the lower extremity most of the dressings and splints have to be applied and the wounds dressed as the patient lies on his stretcher raised on trestles or benches for the purpose. One room is set apart for operations and an operating table and accessories are set up here, and a well-trained orderly, or two if they can be spared, sees to the necessary sterilisation of bowls and instruments, &c.

There seems to be an idea that "aseptic" surgery has been practised at the front, but, as far as the clearing stations are concerned, this is entirely a misapprehension. I have myself never given up "antiseptic" principles and treatment, and I was glad to find that in every clearing hospital antiseptics were always used.

The usual routine for all flesh wounds which are of the punctured variety, and for all abdominal or thoracic wounds, is to paint the skin far around with 2 per cent. iodine in spirit, and to wash the wound itself with either carbolic acid 1 in 20 to 1 in 40; iodine from 1 to 2 drachms to the pint; or strong peroxide of hydrogen. The dressings have always been "antiseptic," and have always consisted of bicyanide of mercury gauze and absorbent wool, for "plain" gauze is considered to be unsuitable and is not provided. If there has been a fracture without extensive laceration or comminution the same procedure is adopted. But if there has been an extensive fracture, especially of the leg or thigh, with laceration, then, whenever it has been possible, the patient has been anæsthetised and the wounds have been enlarged and washed out with antiseptics, and broken bone has been removed and drainage provided.

But the number of cases in which such prolonged treatment can be carried out is necessarily limited by the space for work at disposal of the surgeons and the number of patients waiting treatment. For so much time may be spent on a very few patients that the net result would be harm to the majority. The remedy for all this is not merely a question of increasing the number of the surgeons. That has already been done. When one has to deal with such great numbers of wounded as were dealt with here it is largely a question of space and accommodation, and the difficulties encountered were far more due to the want of large enough suitable buildings near the battle than to anything else. It is easy to say that additional buildings might be obtained as they were required, or that the buildings we did occupy might have been improved. Both these things were done, but no sooner were we getting comfortable in the little town of "B" than the enemy's shells drove us out in a great hurry, and we had to seek other and safer buildings some miles away to our great disadvantage. The same thing happened at "Y," and here unfortunately with loss of life to both officers and orderlies of the Royal Army Medical Corps. In yet a third town we have had to move because of re-arrangement of the fighting line with the French. All these events of course show how impossible it is to try to pitch anything like a "general hospital" close to the front, and if our "clearing stations" had not been very portable we should have undoubtedly been obliged to leave them behind in the hands of the enemy. War is war, and the surgery of war is not the surgery of peace, and never will be. The total number of wounded in this prolonged battle has been very great and the actual figures I am now able to give will show at a glance what the work has been like. At one time the total number of wounded treated at the clearing stations was at the rate of more than 1200 a day, and on one day was over 3000. If these had been equally distributed amongst all the clearing stations on our 40 miles of front and had all come in as room was made for them these difficulties would have been less; but, as a fact, the pressure came especially on three or four stations, and the bulk of the wounded usually came in at the rate of many hundreds within two or three hours. The result was that often every square yard of floor space was taken up by hundreds of stretchers holding wounded men, and many who had injured hands and forearms were at first unable to get sitting space. Yet all these men were always fed and cared for and dressed during the day on which they were admitted. When one thinks that in a London hospital with ample space and permanent equipment the resident staff are really very busy if they have 20 broken legs to treat in a day, and that an operating surgeon who gets through six or eight operations in an afternoon, with plenty of assistants, has done a hard day's work, it is possible to get a faint idea of what it is to treat a hundred or more compound fractures besides caring for five or six hundred other men shot through the chest, the abdomen, the head, &c., and many of whom required immediate attention. And besides the difficulties due to the mere numbers and want of space it must always be kept in mind that the whole object of a clearing hospital is temporarily to treat the patients and send them as soon as possible to the base hospital, so as to make room and be ready for more hundreds of patients from the next day's fighting. To-day's wounded must all be treated to-day, and the work of filling ambulances and trains must follow as soon as possible on the treatment of the wounds, so that what with unloading ambulances as they arrive and reloading them and the hospital trains, many hours' hard work have to be done by the orderlies and surgeons, in addition to treating the wounds. Yet one clearing hospital by working day and night treated more than 1000 cases on each of three consecutive days.

The fact that so many wounds suppurate has caused criticism of the methods adopted, but if methods are judged solely by results without accurate knowledge of the conditions, then mistakes are liable to occur. My own opinion is that, even granted there were abundant time and opportunity in all the clearing stations, the most skilful treatment would not prevent nearly all the worst wounds from suppurating. As I have already pointed out, these are the very patients whose arrival is liable to be unavoidably delayed because they are so severely injured; and their wounds are contaminated before arrival, not by the "clean dirt" of the sun-dried veld, but by a highly septic and manured soil. In these severe wounds also there is often so much necrosing soft tissue that even a slight infection would be difficult to overcome, let alone a massive infection of a large area. Yet I fully agree that many of these severe

wounds should be opened up under an anæsthetic if conditions are sufficiently favourable, and Dr. Rowlands and I have already advocated this in a report on dry gangrene[2] issued some weeks ago.

But it may fairly be pointed out that even if wounds have suppurated there has been an almost complete absence in the base hospitals, as well as those in the front, of real pyæmia, and there have, of course, been no cases of true "hospital gangrene" anywhere. My own opinion is that the wounded as a whole have done very well indeed considering that the buildings were necessarily quite unprepared for surgical work when the battle began, that the men and their clothes were very dirty, that it was often impossible to bring in the wounded for many hours, that the wounds were commonly grossly contaminated before they could be treated, and, above all, that the injured parts were often quite devitalised by the violence to which they had been submitted.

I confess that I have nothing but admiration for the way in which difficulties have been overcome, and I am also convinced that the percentage of mortality amongst the wounded has been very low. But all the same I hope and think that all who have worked here have learned, and are learning, to improve their methods, so that if in the near future there are yet more wounded men, these may benefit by past experience as well as by the criticism and advice of our colleagues.

OUR ARMY'S TEETH.

BY F. NEWLAND-PEDLEY, F.R.C.S. ENG., L.D.S.,
CONSULTING DENTAL SURGEON TO GUY'S HOSPITAL.

British Red Cross Hospital No. 2, Rouen, Dec. 12th.

THE arrival of the first dental officers for service with the troops in France was welcome, for they were very much needed. A great deal of improvement has been effected in the teeth of the army since the Boer War, and the authorities are now very anxious to do everything possible for the care of the teeth, but the question is, How is it to be done? An ideal way would be to mobilise the dental surgeons, making the unregistered men and mechanics act as assistants to the dental surgeons. In this way we could repair the teeth of the army even in the battlefield.

Another way would be carefully to inspect and treat the teeth of every child from the time the first tooth is cut, making dental neglect a punishable offence. This would give admirable results in 25 years, and we might expect additional benefits by heredity, but our needs in this war are immediate, for we want as many men as we can get and they are no use without teeth. Artificial teeth do not always yield good results and offer too great a chance to the malingerer. In a moment he may pocket his artificial teeth or get rid of them, and then be sent home amongst the dental failures. So the only thing to do is to take as many likely men as we can get, even if their teeth are a little below standard, remembering that in exceptional cases even an edentulous man may not suffer from indigestion. I once made a complete set of teeth for a ship's captain, and he always wore them excepting at meals when he removed them, as he had become accustomed to take his food, including biscuit, without teeth, and his digestion was quite satisfactory. This case is abnormal, and I only quote it to show that no rigid line can be drawn, and we can take some doubtful cases if we are prepared to send out a good corps of dental surgeons to do as much work as possible. But this dental corps must not be satisfied to take out teeth, but should be prepared to do a good day's work saving them. They should be organised, inspected, and should work under their own officers. The extractions do not take long and all available time should be devoted to treating exposed pulps and filling carious teeth. In this way a large number of men who otherwise would be lost can be patched up till their return at the end of the war when the dental departments can attend to them.

Reverting to the matter of artificial teeth, there is a wise provision of the authorities that sergeants and some others shall have a right to artificial teeth. The services of the local practitioners may be utilised for a certain number of these cases, saving their voyage home. When there are many wounded it is a great advantage to have "gas," for when men are weak they dread the dentist more than they feared a "Jack Johnson" when they were well. I applied for "gas" on these grounds, and it was sent out to me at once. My experiences at Deelfontein during the Boer war, and now at Rouen, are the basis on which I frame these suggestions. I came to Rouen as a volunteer dental surgeon nearly two months ago, and for the first six weeks I received cases from all quarters, Red Cross and general hospitals and convalescent camp included. If the Government is prepared to send out enough dental officers a large number of soldiers can be saved to the army, but they must come prepared to do the usual full day's work.

[2] THE LANCET, Nov. 28th, 1914, p. 1265.

MEDICINE AND THE LAW.

A Judge on Professional Secrecy.

IN his charge to the grand jury in the case of Annie Hodgkiss, at the Birmingham Autumn Assizes, on Dec. 1st, Mr. Justice Avory made the following observations:—

This woman has been committed on the coroner's inquisition on a charge of murder. The magistrates who have investigated the case have dismissed the charge. The deceased woman, according to the evidence, clearly died as the result of an illegal operation. Three medical men in succession attended her, and to one at least she confided the name of the person who performed the act. No information was given to the police or the authorities, and the woman died without any deposition being taken or without any statement being made by her on her death bed which could be used in a court of law. With the exception of a letter, which was found among deceased's papers, apparently making an appointment with the accused woman, there is absolutely no evidence against this accused person of having performed any operation upon the deceased woman, and the magistrates, taking that view, dismissed the charge. I need not remind you that any statement made by the deceased woman to a medical man is not evidence in a court of law. I can see no evidence, as the case now stands, which will justify you in finding a true bill against the prisoner for murder. The law provides that in the case of any person who is seriously ill, and who, in the opinion of a medical man, is not likely to recover, the evidence of such a person may be taken by a justice of the peace. Under circumstances like those in the present case, I cannot doubt

that it is the duty of the medical man to communicate with the police or with the authorities in order that one or other of those steps may be taken for the purpose of assisting in the administration of justice. No one would wish to see disturbed the confidential relation which exists, and which must exist, between the medical man and his patient in order that the medical man may properly discharge his duty towards his patient; but there are cases, of which it appears to me that this was one, where the desire to preserve that confidence must be subordinated to the duty which is cast upon every good citizen to assist in the investigation of a serious crime such as is here imputed to this woman. In consequence of no information having been given it appears to me that there is no evidence whatever upon which this woman can properly be put upon her trial. I have been moved to make these observations because it has been brought to my notice that an opinion, to which I was a party some 20 years ago, when I was at the Bar, has been either misunderstood or misrepresented in a text-book of medical ethics, and I am anxious to remove any such misunderstanding if it exists. It may be the moral duty of the medical man, even in cases where the patient is not dying, or not unlikely to recover, to communicate with the authorities when he sees good reason to believe that a criminal offence has been committed. However that may be, I cannot doubt that in such a case as the present, where the woman was, in the opinion of the medical man, likely to die, and, therefore, her evidence was likely to be lost, it was his duty, and that some one of those gentlemen ought to have done it in this case.

We doubt if there will be any general agreement in the medical profession with Mr. Justice Avory's views.

A Panel Doctor's Fees Attached.

In the case of O'Driscoll *v.* Manchester Insurance Committee in the High Court of Justice, Mr. Justice Rowlatt, sitting without a jury, recently delivered an important judgment upon the question whether a panel doctor's fees can be attached. The executors of Dr. O'Driscoll, a deceased medical man, formerly in practice at Manchester, sold the goodwill of his practice to Mr. W. D. Sweeny, who was unable to pay the whole of the agreed purchase money, and against whom judgment was obtained for the balance due. In order to satisfy this judgment the plaintiffs obtained a conditional order attaching all moneys due from the committee to Mr. Sweeny as a member of the panel. Mr. Justice Rowlatt distinguished between the case of payments due to a member of the panel and the salaries of officers of the Crown, which are not liable to attachment, and held that as soon as moneys came into the hands of the Insurance Committee for distribution among the members of the panel a debt became due to every medical man who had done work under contract with the committee, and that the money thus becoming due was liable to attachment.

Action for Negligence in South Africa.

The Supreme Court of South Africa recently heard the appeal of Mr. John Mitchell against whom a jury had found a verdict for £100 damages on the ground of alleged negligence in performing an operation whereby a steel needle used with a Potain aspirator had been broken and remained in the patient's body. In allowing the appeal and giving judgment for the appellant, Mr. Mitchell, Sir James Rose-Innes, who presided, dwelt upon the necessity for proving, on behalf of a plaintiff in such a case, that the defendant did not employ reasonable care and skill, not that he did not bring to bear the highest possible degree of professional skill; also that a mistaken diagnosis, if proved, which had not been done, or the mere fact of an accident taking place, did not constitute proof of negligence. The appeal succeeded because the court was of the opinion that there was not sufficient evidence to justify reasonable men in finding that there was negligence. A feature in the case which received attention in the judgment delivered was that three specific questions were put to the jury at the trial: Was the defendant negligent? Did he negligently use an improper instrument? Was it the result of such negligence that the needle broke off and remained in the patient's body? The judge, however, at the same time told the jury that they were not bound to answer these questions, but might give a general verdict. They adopted the latter course, and Sir James Rose-Innes, very reasonably, treated this as meaning that they could not make up their minds as to any definite negligence upon which damages could be based, but desired to compensate the plaintiff for having a needle in his back.

Easy Purchase of Poisonous Drugs.

Dr. F. J. Waldo had occasion to explain at length to a jury recently in the City coroner's court the dangers of indulgence in cocaine and morphine, and to comment upon the ease with which they can be purchased from druggists who are willing to evade the formalities imposed by the Pharmacy Act. In the case before him the deceased, an Indian woman from Assam, had been living with a retired civil engineer for many years, and both were addicted to injecting morphine and cocaine. The man, who admitted having seen the deceased take 10 grains of cocaine in one day, had gone out and purchased a supply from a druggist in Holborn, without having to sign in any book kept for the purpose, and had returned to find his companion unconscious. The deceased had died at St. Bartholomew's Hospital from heart failure resulting from cocaine and morphine poisoning, and as there were bottles produced, which had apparently been purchased by the man or woman, containing the drugs but not bearing the labels prescribed by the law, Dr. Waldo suggested that the police should make inquiry and if possible take action against the vendors.

A Pernicious Impostor.

At the recent sessions of the Central Criminal Court sentence of three years' penal servitude was passed upon John Cubbin, who pleaded guilty to charges of giving certificates of the cause of death, not being a medical practitioner, and of committing perjury at inquests where he swore that he was qualified. His record was an unusually bad one. He had been fined in connexion with the giving of certificates and use of medical titles in 1900, and on subsequent occasions had been convicted of theft and of bigamy. He had been sentenced to five years' penal servitude in 1905, and had in 1913 been released from prison as a convict on licence, soon after which he had procured engagements first from one medical practitioner and then from another as an assistant. In the last instance, when he was using the name of Harrison and posing as a surgeon-general, he claimed to have succeeded to a baronetcy through the death of an imaginary relative. Medical men engaging assistants and locum-tenents should take the case of Cubbin as a warning. Proper inquiries are absolutely necessary in the absence of an introduction of a trustworthy character, and the Medical Register should also be consulted.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Dec. 10th, Sir W. WATSON CHEYNE, the President, being in the chair.

The PRESIDENT reported that Sir Berkeley Moynihan had left England to take up his duties as a consulting surgeon to H.M. forces overseas; and it was resolved to grant leave of absence from the meetings of the Council to him for the period of his service abroad.

A report was read from the Board of Examiners in anatomy and physiology for the Fellowship stating that at the recent examination 57 candidates were examined, of whom 15 were approved and 42 rejected.

It was resolved to grant Diplomas of Fellowship to nine successful candidates.

In accordance with a report from the Board of Examiners in Dental Surgery it was resolved to grant the Licence in Dental Surgery to 35 successful candidates.

Examiners were appointed to the various examinations, the only new examiner being Dr. C. M. Hinds Howell, who was appointed examiner in physiology for the Second Conjoint Examination.

Mr. H. F. Waterhouse was re-elected a member of the Court of Examiners.

A report was received from the committee on the annual report of the Council dealing with the recent annual meeting, and in accordance with that report it was resolved that—

As the matter referred to in the resolution carried at the annual meeting of the Fellows and Members was very fully considered by the Council so recently as March of this year, the Council see no advantage in reopening the discussion at the present time.

In accordance with the report of the committee of management, it was resolved to add the Newcastle-on-Tyne Royal Grammar School to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics.

A letter was read from the Professional Classes War Relief Council stating that it has been formed to deal with distress in the professional classes directly due to the war, and that it was decided at the last meeting of the council to ask the College to nominate a representative to serve on the council. The President was nominated.

A letter was read from Sir Henry Morris reporting the proceedings of the General Medical Council at their recent session. The letter was received and entered on the minutes, and the best thanks of the Council were given to Sir Henry Morris for his services as the representative of the College on the General Medical Council.

The PRESIDENT announced that he would deliver the Hunterian Oration on Monday, Feb. 15th, 1915, and it was resolved that there should be no Hunterian dinner.

A letter was read from Mr. F. G. Parsons stating that at the annual general meeting of the licensed teachers of anatomy in London, held on Nov. 26th, it was decided to ask the Council of the Royal College of Surgeons to help in taking further measures with a view to increasing the present inadequate supply of "subjects" for dissection, and to suggest a conference between representatives of the Council and the licensed teachers. A committee of the Council was appointed to meet the teachers.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted commissions as Surgeons for temporary service in His Majesty's Fleet:—Dated Dec. 5th: James Robertson Adam. Dated Dec. 7th: Ernest Farrant Cox, Frank Elliott, Edward Heffernan, William Archibald Mills, William John Morris, John Morrison, Horace Clulow Nixon, George Marshall Oakden, Augustus Kevin Roche, and Andrew Edgar Struthers.

Temporary Surgeon: A. P. Barrett to the *Newmarket* and for duty in Clacton.

ROYAL NAVAL VOLUNTEER RESERVE.

The following have been entered as Surgeon Probationers for temporary service:—C. McDonald, G. A. Paris, N. K. Henderson, W. O. Lodge, C. T. Helsham, W. W. K. Brown, W. O'G. Donoghue, P. G. S. Davis, K. M. Ross, W. J. McB. Ross, W. A. Turner, N. A. H. Turner, J. F. Smith, D. S. Prentice, and P. H. S. Smith.

ROYAL ARMY MEDICAL CORPS.

The undermentioned to be temporary Lieutenant-Colonels:—Dated Nov. 12th: Major Arthur E. J. Barker, 3rd London General Hospital, Territorial Force. Dated Nov. 21st: Sir Thomas Myles. Dated Nov. 22nd: Sir Charles Bent Ball, Bart., and Captain Sir William A. Lane, Bart., 2nd London (City of London) General Hospital, Territorial Force. Dated Dec. 1st: Major Sir Frederic S. Eve, 2nd London (City of London) General Hospital, Territorial Force, and Major James Swain, 2nd Southern General Hospital, Territorial Force. Dated Dec. 3rd: Major William Aldren Turner, 4th London General Hospital, Territorial Force.

The undermentioned to be temporary Lieutenants:—Dated Nov. 23rd, 1914: Keith Douglas Falconer, William Aloysius Murphy, Lawrence Weir Bain, Basil Cedric Ashton, Walter de Marchot Hill, and James MacGregor. Dated Nov. 24th: John Charles Venniker, Cunison Deans Rankin, Ronald Wingrave Duncan, Charles Jerome Alexander Nicolai Mercier, Crawford Lundie, Thomas Perrin, and Alexander Galletly. Dated Nov. 26th: Arthur Davies and John Spencer-Daniell. Dated Nov. 28th: William Hector Wotton. Dated Nov. 29th: Edwin FitzGerald O'Connor. Dated Nov. 30th: Lewis Hay Irving Bell, Holden Carson, Robert Joseph English, and Charles James Morton. Dated Dec. 1st: Joseph Elias Barnes, William Herbert Neil, Harold Dunkerley, Harold Francis Golding Noyes, Bartholomew Joseph Mullin, Ricardo Cope, Ralph Martin Soames, William Annandale Troup, Claude Harry Mills, Meredith Ffoulkes, John Neville Griffiths, Charles Howden Harbinson, John Francis O'Malley, John Harold Wilson, Robert Waller Willcocks, Arthur Norman Leeming, Neil Islay Sinclair, Walter Stuart Evans, Henry Michael Joseph, Tobias Rustat Hemsted Blake, Oscar Phillip Napier Pearn, John Arthur Noel Scott, John Finlayson McGill Sloan, and David Roberts Williams.

Lieutenant Edward A. Seagar relinquishes his temporary commission (dated Dec. 7th, 1914).

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Henry S. A. Alexander, Arthur L. Anthony, John Deighton, Gerald C. Dixon, Hugh A. Fawcett, Cromwell Gamble, Herbert L. Garson, Gilbert A. Harvey, James R. C. Mackintosh, Mathew McKnight, Wilfrid W. Phillips, William K. Russell, Bertrand C. O. Sheridan, John S. Sloper, Harry N. Stafford, Robert I. Sullivan, Charles G. Waddington, John R. N. Warburton, George W. Watson, Colin Wilson, and William A. Young.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Robert Alfred Greenwood to be Captain.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd South Midland Field Ambulance: Frank Treadwell Boucher to be Lieutenant.

2nd Wessex Field Ambulance: Major Harry Compton Parsons, Reserve of Officers, New Zealand Medical Corps, to be Major (temporary). To be Captains (temporary): Gerald Dudley Freer, Leonard Leighton Hanham (late Captain, A.M.R.), and Harold Cotterell Adams. To be Lieutenants: William Thomas Pearse Meade-King, Henry Nunan Collier, and Charles Fenwick Backhouse.

3rd Wessex Field Ambulance: To be Lieutenants: Arthur Holdsworth Davis, Frederick Tooth, Frederick William Brunker, Philip McRitchie, Frank Lindsay Dickson, and Frederick Hardie.

1st London (City of London) General Hospital: Majors to be Lieutenant-Colonels: Archibald E. Garrod and Holburt J. Waring. Captains to be Majors: Percival Horton-Smith Hartley, C.V.O., and George E. Gask.

3rd London General Hospital: The undermentioned Lieutenants are seconded: George H. D. Webb and Edward Smeed.

4th London General Hospital: Major William A. Turner is seconded.

East Anglian Clearing Hospital: Lieutenant William Redpath to be Captain.

1st Highland Field Ambulance: Captain James Robertson to be Major (temporary). Bernard Gordon Beveridge to be Lieutenant.

3rd Highland Field Ambulance: Captain George Waterston Miller to be Major.

1st Welsh Field Ambulance: Captain Thomas Donovan to be Major.

2nd Welsh Field Ambulance: Captain Owen L. Rhys to be Lieutenant-Colonel (temporary). Barry Keyte Tenison Collins to be Lieutenant.

3rd Welsh Field Ambulance: Captain Daniel E. Evans to be Lieutenant-Colonel (temporary). The undermentioned to be Lieutenants: Richard James Isaac, Harry MacManus Soden, Joseph Carroll, and John Joseph Porter.

2nd Western General Hospital: Alfred Ernest Barclay to be Captain.

South Midland Clearing Hospital: Captains Charles B. Baxter and James L. Joyce, from Attached to Units other than Medical Units, to be Captains. Henry Gauntlett Langdale Smith to be Lieutenant.

London Mounted Brigade Field Ambulance: Captain James W. McIntosh to be Major (temporary). Lieutenant William F. Smartt to be Captain (temporary).

1st Home Counties Field Ambulance: Captain Arthur T. Falwasser to be Major (temporary).

1st London (City of London) Field Ambulance: Lieutenant David J. Scott and Lieutenant Archibald Leitch to be Captains (temporary).

3rd London (City of London) Field Ambulance: Major John A. Masters, from Attached to Units other than Medical Units, to be Lieutenant-Colonel (temporary). Captain George L. L. Lawson to be Major (temporary). Captain Myer Coplans is seconded. Lieutenant Robert Carswell to be Captain (temporary).

4th London Field Ambulance: Captain Thomas B. Layton to be Major (temporary). John Mackay Plews to be Lieutenant.

5th London Field Ambulance: The undermentioned Lieutenants to be Captains (temporary): John E. Sandilands and George Scott.

1st Northumbrian Field Ambulance: John Hamilton Barclay to be Lieutenant.

1st West Riding Field Ambulance: Lawrence Abel Mackenzie to be Lieutenant.

1st Western General Hospital: Ralph Lamb to be Lieutenant.

Northumbrian Clearing Hospital: John Stanley Manford (late Captain, 3rd Volunteer Battalion, The Northumberland Fusiliers) to be Captain. Richard Woodward Swayne to be Lieutenant.

1st East Anglian Field Ambulance: Arthur William Paterson to be Lieutenant.

2nd Eastern General Hospital: William Barrington Prowse to be Captain available for service on mobilisation.

1st North Midland Field Ambulance: Charles Brand Johnstone to be Lieutenant.

2nd North Midland Field Ambulance: Edward Crawford Trench Emerson to be Lieutenant.

2nd Northern General Hospital: Lieutenant George P. Anning, from Attached to Units other than Medical Units, to be Captain.

4th Northern General Hospital: Douglas Edward Darbyshire to be Captain.

2nd London Sanitary Company: Captain Charles M. Fegen to be Major (temporary). Lieutenant Frederick G. Caley to be Captain (temporary).

2nd London Clearing Hospital: Iorwerth Hubert Lloyd-Williams to be Lieutenant.

1st Wessex Field Ambulance: To be Lieutenants: Edmond Langley Meynell, Fred Ellis, Claude John Eddowes Bennett, and John Arthur Bell. Lieutenant Charles H. Maskew, from the 3rd Wessex Field Ambulance, to be Lieutenant.

Attached to Units other than Medical Units.—Major Thomas H. Chittenden, from the London Mounted Brigade Field Ambulance, to be Major. To be Captains: Lieutenant Robert Proudfoot and Bertram Maughan Footner (late Lieutenant, 5th Battalion, The South Staffordshire Regiment). To be Lieutenants: Lieutenant Leonard B. Baird (from 3rd West Lancashire Field Ambulance), Lieutenant Harold D. Lane (from the 3rd North Midland Field Ambulance), Thomas Louis de Courcy, Charles Gerald Tench, Louis Bruce Stringer, Ernest Edward Balman Landon, Lieutenant Herbert W. Joyce (from 1st North Midland Field Ambulance), John Carrington Marklove, and George Hooper Rains.

TERRITORIAL FORCE RESERVE.

Captains from the 1st Northern General Hospital to be Captains: Joseph C. Stewart and James W. Heslop.

DEATHS IN THE SERVICES.

Deputy Surgeon-General William Henry Harris, late I.M.S., at Shanklin, in his eighty-fifth year. He joined the Madras Medical Service in 1853 and attained the rank of deputy surgeon-general in 1881. He was formerly superintendent of the Lying-in Hospital and professor of midwifery in University College, Madras.

THE HEALTH OF THE NAVY.

The statistical report on the Health of the Navy for the year 1913 has just been issued by the Admiralty.[1] It is signed by the Medical Director-General, Sir Arthur May, K.C.B., and dated Oct. 14th, 1914. The brief introduction points out that in the present report the appendix, which formerly contained articles on professional subjects by medical officers in the Royal Navy, has been omitted owing to the intended publication of a quarterly naval medical journal. Owing to the general mobilisation of the Navy on August 1st, 1914, the remarks on the various returns, which were in course of compilation at that date, have been condensed as far as possible. Once again the Medical Director-General is able to report that the returns for the total force for the year under review show a continuous improvement in the general health of the Fleet as compared with the preceding five years. The total force, corrected for time, in the year 1913 was 126,830, and the total number of cases of disease and injury entered on the sick list was 77,438, giving a ratio of 610·56 per 1000, a decrease of 46·09 as compared with the average ratio for the preceding five years. The total number of cases of venereal disease recorded was 11,821, giving a satisfactory decrease of 22·85 per 1000 in the case ratio as compared with the average for the previous half decade. Five wounds in action were recorded, with one death. How different will the figures for 1914 look in this respect!

[1] Cd. 7683. Price 7½d. Wyman and Sons, Limited, Fetter-lane, E.C.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

For obvious reasons the war must have seriously affected military journalism, and this probably accounts for the fact that the October issue of the Journal of the Royal Army Medical Corps has only reached us on the eve of going to press this week. It contains several interesting and topical articles, among others being Some Essential Factors in the Construction of Field Service and Expeditionary Rations, by Lieutenant-Colonel W. W. O. Beveridge, D.S.O.; Carbon Dioxide Snow with Special Reference to the Treatment of Oriental Cores, by Captain T. J. Mitchell; An Improved Method of Carrying a Wounded Man by a Single Bearer, by Captain D. B. McGrigor; A Modified System of Accounting for Medical and Surgical Supplies in Military Hospitals, and Army Biscuit Receipts.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8149 births and 5442 deaths were registered during the week ended Saturday, Dec. 12th. The annual rate of mortality in these towns, which had been 14·3, 16·6, and 15·3 per 1000 in the three preceding weeks, rose in the week under notice to 15·7 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 14·3, against 14·6 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 5·7 in Ilford, 6·1 in Darlington, 6·6 in Eastbourne, 6·8 in Aberdare, and 6·9 in Carlisle to 21·2 in York, 21·5 in Southampton, 21·9 in Hastings, 23·9 in Newcastle-on-Tyne, and 24·5 in Wigan.

The 5442 deaths from all causes were 113 in excess of the number in the previous week, and included 429 which were referred to the principal epidemic diseases, against 448 and 439 in the two preceding weeks. Of these 429 deaths, 181 resulted from measles, 71 from infantile diarrhœal diseases, 62 from diphtheria, 50 from whooping-cough, 48 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·2, against 1·3 per 1000 in each of the four preceding weeks. The deaths attributed to measles, which had been 148, 174, and 155 in the three preceding weeks, rose to 181 last week, and caused the highest annual death-rates of 1·4 in Plymouth and in Huddersfield, 1·7 in Liverpool, 1·9 in Birkenhead, 2·6 in Gateshead, 3·2 in Rotherham, 4·6 in Wigan, and 4·8 in Newcastle-on-Tyne. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 138, 102, and 94 in the three preceding weeks, further declined to 71 last week, and included 15 in London, and 5 each in Birmingham and Liverpool. The fatal cases of diphtheria, which had increased from 58 to 99 in the four preceding weeks, fell to 62 last week, and included 13 in London, 7 in Birmingham, 5 in Liverpool, and 3 each in Tottenham, Northampton, and Hull. The deaths attributed to whooping-cough, which had been 35, 42, and 48 in the three preceding weeks, further rose to 50 last week, of which 10 were registered in London, 5 in Bristol, 4 in Newcastle-on-Tyne, and 2 each in Portsmouth, Stoke-on-Trent, and Rhondda. The deaths referred to scarlet fever, which had been 28, 42, and 30 in the three preceding weeks, rose to 48 last week, which was the highest number recorded in any week of the current year, and included 11 in London, 5 in Sheffield, 4 in Liverpool, and 3 each in Birmingham, Manchester, and

Preston. The fatal cases of enteric fever, which had been 17, 11, and 13 in the three preceding weeks, further rose to 17 last week, and included 2 each in London, Liverpool, Halifax, Bradford, and Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5005, 5035, and 4980 at the end of the three preceding weeks, had further fallen to 4893 on Saturday last; 504 new cases were admitted during the week, against 627, 623, and 537 in the three preceding weeks. These hospitals also contained on Saturday last 1624 cases of diphtheria, 59 of enteric fever, 50 of measles, and 46 of whooping-cough, but not one of small-pox. The 1340 deaths from all causes in London were 15 in excess of the number in the previous week, and corresponded to an annual death-rate of 15·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 203, 324, and 312 in the three preceding weeks, rose to 317 last week, and were 90 above the number recorded in the corresponding week of last year.

Of the 5442 deaths from all causes in the 97 towns, 206 resulted from different forms of violence and 456 were the subject of coroners' inquests, while 1485 occurred in public institutions. The causes of 47, or 0·9 per cent., were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Nottingham, and in 70 other smaller towns. Of the 47 uncertified causes of death, 12 were registered in Birmingham, 8 in Liverpool, 4 in Southampton, 3 in Gateshead, and 2 each in Manchester and Preston.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1163 births and 780 deaths were registered during the week ended Saturday, Dec. 12th. The annual rate of mortality in these towns, which had been 16·6, 18·4, and 18·3 per 1000 in the three preceding weeks, further declined to 17·7 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 16·2, against 14·3 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 11·7 in Clydebank, 13·5 in Edinburgh, and 15·3 in Perth, to 20·4 in Falkirk, 20·5 in Ayr, and 23·5 in Kilmarnock.

The 780 deaths from all causes were 23 fewer than the number in the previous week, and included 76 which were referred to the principal epidemic diseases, against 82 and 79 in the two preceding weeks. Of these 76 deaths, 32 resulted from whooping-cough, 16 from diphtheria, 14 from scarlet fever, 8 from infantile diarrhœal diseases, 4 from enteric fever, and 2 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, against 1·2 per 1000 in the 97 large English towns. The deaths attributed to whooping-cough, which had increased from 7 to 30 in the four preceding weeks, further rose to 32 last week, of which 24 occurred in Glasgow and 2 each in Dundee and Motherwell. The deaths referred to diphtheria, which had been 17, 13, and 20 in the three preceding weeks, fell to 16 last week, and included 5 in Glasgow, 4 in Aberdeen, and 3 in Edinburgh. The fatal cases of scarlet fever, which had been 16, 25, and 15 in the three preceding weeks, were 14 last week, and included 9 in Glasgow. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had declined from 31 to 10 in the seven preceding weeks, further fell to 8 last week, of which 3 belonged to Glasgow and 2 to Dundee. The 4 deaths referred to enteric fever, of which 2 occurred in Edinburgh, were equal to the average in the earlier weeks of the quarter. The 2 fatal cases of measles were registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 163 in the 12 preceding weeks, fell to 154 in the week under notice; 23 deaths resulted from different forms of violence, against 39 and 34 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 585 births and 488 deaths were registered during the week ended Saturday, Dec. 12th. The annual rate of mortality in these towns, which had increased from 17·7 to 20·1 per 1000 in the four preceding weeks, further rose to 21·1 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 17·7, against corresponding rates of 14·3 and 16·2 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 23·2 in Dublin (against 15·5 in London and 18·5 in Glasgow), 20·8 in Belfast, 25·2 in Cork, 17·8 in Londonderry, 19·0 in Limerick, and 30·4 in Waterford, while in the 21 smaller towns the mean death-rate was 16·1 per 1000.

The 488 deaths from all causes were 24 in excess of the number in the previous week, and included 43 which were referred to the principal epidemic diseases, against 40 and 42 in the two preceding weeks. Of these 43 deaths, 17 resulted from infantile diarrhœal diseases, 12 from measles, 8 from scarlet fever, 3 from whooping-cough, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·9, against corresponding rates of 1·2 and 1·7 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) atributed to diarrhœa and enteritis, which had been 13, 10, and 12 in the three preceding weeks, further rose to 17 last week, and included 9 in Dublin, 5 in Belfast, and 2 in Cork. The deaths referred to measles, which had been 10, 14, and 8 in the three preceding weeks, rose to 12 last week, and comprised 11 in Belfast and 1 in Cork. The fatal cases of scarlet fever, which had declined from 14 to 8 in the four preceding weeks, were again 8 last week, of which 3 were recorded in Belfast and 3 in Waterford. The 3 deaths attributed to whooping-cough, comprising 2 in Dublin and 1 in Belfast, were slightly below the average in the earlier weeks of the quarter. The fatal cases of diphtheria were registered in Dublin and Belfast, and that of enteric fever in Waterford. In addition to the above, a death from typhus occurred in Belfast and another in Cork.

The deaths referred to diseases of the respiratory system, which had been 85, 100, and 90 in the three preceding weeks, rose to 120 in the week under notice. Of the 488 deaths from all causes, 153, or 31 per cent., occurred in public institutions, and 8 resulted from various forms of violence. The causes of 16, or 3·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion did not exceed 0·9 per cent.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A School for Injured Soldiers.

THE Mayor of Lyons intends to ask the support of the Government for a scheme he has brought forward on behalf of mutilated soldiers the nature of whose injuries renders their return to their former occupation impracticable. He suggests the creation of a school of instruction whereby such soldiers may be taught free of charge, while receiving the necessary medical and other care, some occupation for which they may be individually fitted, so as to enable them to maintain themselves.

A Rest Canteen at the Gare du Nord.

The English Red Cross has opened a rest canteen in the basement of the Gare du Nord, Paris, containing beds and well-installed lavatories. Tea, coffee, milk, roast beef, sandwiches, and sweets may be obtained there.

Entertainments for Wounded Soldiers.

The custom is spreading of enlivening the tedium for the wounded in hospital by good music and readings. Recitations and concerts have been organised by a member of the Comédie Française at the Fondation Thier, now a Red Cross hospital, and at the Hôpital Pitié, and a concert is being organised for the hospital at the Grand Palais. On Dec. 5th, in Professor Pozzi's service at the Hôpital Broca, an entertainment was given in the wards for those severely wounded, at which Professor Pozzi with all his staff assisted. Convalescents were present on deck chairs, wearing their uniform again for the first time.

Antityphoid Vaccination in Paris.

Antityphoid vaccination has been compulsory throughout the French Army since March. In October the Prefect of the Seine publicly announced that young men of the class of 1915 could be vaccinated before joining their corps, in which case they would only have to present their tickets to the medical authorities. A double object is thus

attained: first, a relaxation of the strain on the Military Medical Service; and secondly, the familiarisation of the general public with antityphoid vaccination. A special free medical service under the direction of Dr. Maurange, and approved by the military authorities of Paris, has been established in large offices by the generosity of the Marquis de Vogüé, President of the Society of St. Gobain. Four boards sit there at the same time, each consisting of a vaccinating surgeon and his assistant, with a woman secretary. Everyone to be vaccinated hands his ticket to the secretary, who indicates on it to the medical man whether it is a case for a first, second, or third injection. After an application of tincture of iodine the vaccinated person goes away with his ticket and a cachet of aspirin. Professor Vincent's method and vaccine are used. On one day alone this sanitary service vaccinated 4100 recruits of the class of 1915, and also 500 civilians, men, women, and children. The organisation can vaccinate from 600 to 800 persons at a sitting. With the thorough technique employed few or no serious reactions have been noted. A few subjects have complained of a slight weariness in the arm or a passing headache; fever is still more rare, hardly 1 or 2 per cent. The results of antityphoid vaccination are no longer open to discussion. Not a single case of morbidity or a death has been observed among the vaccinated since its introduction. The vaccination of the class of 1916 is already under consideration, the service being prepared to vaccinate every recruit, to whose advantage it is to have it done in advance of joining his corps. When once antityphoid vaccination shall have become usual, the scourge of typhoid will greatly diminish.

Dec. 12th.

Correspondence.

"Audi alteram partem."

THE MEDICAL STUDENT'S DUTY.

To the Editor of THE LANCET.

SIR,—In my presidential address to the General Medical Council on Nov. 24th I expressed the opinion that "the need for efficient physicians and surgeons in the field and at home is not less urgent than the need for efficient soldiers and sailors"; and I said that I had "felt it my duty to press this consideration on senior students, who, though they have nearly completed their curriculum, are ready to forego the prospect of early qualification and to enrol themselves straightway in the combatant forces."[1]

To-day I have received a letter from Surgeon-General Sir Alfred Keogh, which contains the following passage: "I think with you that the senior student is best fulfilling his duty to the country by getting his degree and then joining the army. The need for young qualified men will become great, and I should regret that the supply should be diminished."

As I daily receive letters from senior students and their parents who desire guidance in their choice of apparently conflicting duties, I shall be grateful if you will make known the opinion held at the War Office on the subject.

I am, Sir, yours faithfully,

DONALD MACALISTER,
President, General Medical Council.

Medical Council Office, Oxford-street, W., Dec. 10th, 1914.

[1] THE LANCET, Nov. 28th, 1914, p. 1280.

THE TREATMENT OF TETANUS.

To the Editor of THE LANCET.

SIR,—In 1910 I read a paper at the Royal Society of Medicine on the treatment of tetanus by the intraspinal injection of a 25 per cent. solution of magnesium sulphate. This is given in addition to the ordinary antitoxin treatment. In seven cases in which I used the method four recovered, three of them being very severe cases. In one of the fatal cases it is very doubtful if the fluid was injected intraspinally. I referred to 21 cases, with 12 recoveries.

Lumbar puncture is performed in the usual way and fluid withdrawn; this is replaced by the magnesium sulphate solution in the proportion of 1 c.c. for each 25 pounds of body weight. This makes about 5 to 6 c.c. for an ordinary adult. The lordosis and opisthotonos make this at times difficult. The body should be propped up slightly afterwards to prevent the fluid reaching the medulla and causing respiratory failure (in a recorded case artificial respiration was effective); the result is flaccidity of the lower limbs and abdominal muscles, and very often the trismus diminishes. With this relief to spasm sleep often comes on. It should be repeated as often as is necessary; sometimes it has to be repeated within the 24 hours. In one of my cases 16 injections were given without any bad results; some of the later injections were larger, but no cumulative effect was seen.

The treatment is not free from danger. The principal risk is respiratory failure; prolonged artificial respiration is the remedy for this. Bronchorrhœa has been recorded, but I have seen this in tetanus in a case treated only by antitoxin. Retention of urine is also common after this treatment. The spinal canal might be repunctured and the magnesium sulphate solution washed out if respiratory failure occurs. For the bronchorrhœa atropine hypodermically has been advised. I have advocated the method as an adjuvant to the ordinary antitoxin treatment as a means of obtaining rest and preventing exhaustion from the spasms whilst the body is overcoming the toxæmia. Magnesium sulphate has also been used subcutaneously and good results have been claimed for it, but I have no personal acquaintance with the methods.—I am, Sir, yours faithfully,

LLEWELLYN PHILLIPS,
Professor of Medicine in the Egyptian Government Medical School, Cairo.

Nov. 27th, 1914.

To the Editor of THE LANCET.

SIR,—In the very valuable and instructive discussion on the treatment of tetanus at the Medical Society of London, abstracted in THE LANCET of Dec. 12th, and also in your leading article in the same issue very little mention is made of anaphylaxis—I mean of true anaphylaxis as opposed to "serum sickness." It seems to me that a favourable opportunity is now offered, when so many injections of serum are being used for prophylactic and curative purposes in tetanus and other diseases, to observe this phenomenon should it occur.

All who have studied Professor Richet's work[1] must have been deeply impressed by his observations. Personally, I am inclined to think anaphylaxis is not a regular or even common phenomenon in the most favourable circumstances. Some years ago Dr. Murray Bligh and I made many observations and found it more difficult to obtain experimentally than we had been

[1] English translation by J. Murray Bligh.

led to suppose by the writings of others. At the same time, of course, it may, and does, occur that an animal or human being is sensitised by a dose of foreign protein—e.g., serum—and dies suddenly on the administration subsequently of the smallest dose of the same protein after and within a certain time. It is, therefore, a matter of considerable importance that valuable lives should not be risked at the present time in the circumstances which now exist as regards serum production and therapy, when by simple measures all danger can be eliminated. Sera are given so often and with so little regard for the future—so far as the possibility of anaphylaxis is concerned—that it seems worth while to consider whether we should not take steps at once to mitigate the danger of which I have spoken.

Sera are, I believe, at present practically all taken from immunised horses. Surely it would be a wiser course to immunise several different species of the larger animals with the various organisms against which horses are now commonly immunised. If this were done anaphylaxis, which is absolutely specific to the serum of any given species, could be certainly guarded against by using the sera of different animals, immunised against the same organisms, when more than one dose of serum was administered to the same individual after a short interval and within, say, 12 months, and each individual so treated should receive a card, or be marked in some way, for the instruction of those who treat him subsequently.

The matter is one of urgency and gravity; either there is no such thing as anaphylaxis or the course I have mentioned should immediately be adopted by those responsible for the preparation of the various sera.

Meanwhile, it may be worth while to remember that it is said that the fatal phenomena of anaphylaxis can be avoided if the serum be administered while the patient is under the influence of ether. I think we may disregard the statement that to produce anaphylaxis the two injections must be made in identical sites—subcutaneous, intrathecal, &c.

I should also like to allude to another point concerning the administration of sera. Susceptible subjects may be made seriously ill with "serum sickness"; but this can be prevented, or subsequently mitigated, by the administration of large doses of calcium salts by the mouth; three doses, each consisting of two ounces of the liq. calcii lactat. B.P. Codex in half a pint of water, should be administered with four-hourly intervals on the day on which the serum is administered or the "sickness" develops. I can testify to the value of calcium lactate in these circumstances from a personal experience.—I am, Sir, yours faithfully,

Liverpool, Dec. 14th, 1914. W. BLAIR BELL.

MEDICAL EDUCATION OF WOMEN IN LONDON.

To the Editor of THE LANCET.

SIR,—The increase in the number of women entering upon the study of medicine in London makes it urgently necessary to increase the laboratory accommodation of the London (Royal Free Hospital) School of Medicine for Women. This is not a war appeal, but it appears to the council of the school to be justified even at a time like this by the need of the country for more doctors in the near future, and by the fact that this school is the only one in London at which women can obtain a medical education.

The school deserves help for its work in the past. Founded 40 years ago, when there were only two women on the British Medical Register, there are now about 1000, of whom over 600 are former students of the school.

The school deserves help for the work it is doing now. The annual entry has doubled in the last six years. 212 students are in attendance, and if the present annual entry be maintained this number will rapidly rise to 300. It is a school of the University of London in the Faculty of Medicine. It has beautiful and suitable premises built 1899–1900, but they are not large enough for the present number of students. Additions to the laboratories, new research rooms, and more lecture rooms are essential. An adjoining site has been secured. Plans are prepared and approved, and building is to begin directly after Christmas.

The school deserves help for the work of the future. The demand for medical women constantly increases. In public departments throughout this kingdom, in sanatoria, in Poor-law institutions, in hospitals both in England and India, and as medical missionaries all over the world, they work in ever-growing numbers. At the present time medical women are urgently called upon to fill the places and supplement the work of the medical men serving with the army, and they are doing this both in this country and in France, so far as their numbers permit. This demand will be increased in the near future owing to the number of young men now joining the army, who might otherwise have studied medicine. Were twice as many to qualify as qualify now, all would be absorbed by these and other needs.

The council must raise £25,000 to pay for the additional buildings required and their equipment, and ask those interested in the work and medical education of women to provide this sum. Donations or promises should be sent to the London (Royal Free Hospital) School of Medicine for Women, 8, Hunter-street, W.C., addressed to the honorary treasurer, Mr. M. J. Henderson, who joins with us in the appeal.

We are, Sir, yours faithfully,

E. GARRETT-ANDERSON, President.
F. D. ACLAND, Chairman.
LOUISA B. ALDRICH-BLAKE, Dean.
MAY THORNE, Hon. Secretary.

London (Royal Free Hospital) School of Medicine for Women, Dec. 14th, 1914.

THE ETIOLOGY OF LEPROSY.

To the Editor of THE LANCET.

SIR,—The letters in THE LANCET during August and September under the heading of "The Relation of Fish to Leprosy" induce me to raise briefly the question of the etiology of leprosy, which goes rather beyond the question of fish, be it fresh, salt, decomposed, or other.

It is really high time that the consideration of a subject of such engrossing importance should be restricted to the recording of facts and to analogical reasoning. What is being done throughout the world to sift the family history of the leper? Speaking for parts of the tropics where leprosy occurs, and of which I have personal experience, I can say that existing conditions are little likely to favour the acquisition of etiological facts. A lamentable process through the magistrate's court, sometimes a stay in a police cell, may be the committal

portal for admission to the leper asylum; the medical officer to the institution has probably already a large district under his charge for general medical practice, and in the time devoted to the institution will be up to date no doubt in experimental drug treatment of his patients; an annual report is returned showing numbers of admissions and removals, and perhaps also the number of tea parties and magazines generously contributed by charity. But where is to be found the anamnesis in respect of a single case of leprosy?

Points regarding leprosy that are known, humanly, are: It is a disease of man; amongst animals the nearest approach to leprosy is found in the rat; there is sufficient evidence to justify the belief that it spreads from man to man; it has been believed to be a hereditary disease, a point indicative of contagion; the means of contagion are probably personally intimate; the incubation period of the disease is probably long; its occurrence in childhood is very rare; no proof is forthcoming of specific infection being derived from food of any sort whatever, though food as a vehicle of convection from man to man cannot be eliminated; experimentally at least, if not in nature, the bacilli have been demonstrated in certain blood-sucking "insects."

The inquiry has to be a domestic investigation on the same lines as are followed by the health officer in relation to typhoid, diphtheria, tuberculosis. When our colonies can boast of an organised department of preventive medicine we may expect accumulation of records which should demonstrate inevitably the etiology of leprosy; as inevitably as the microscope shows the bacillus. Until then, perhaps, the millions available in the hands of the great pioneers of private research might be directed to the organised field investigation of leprosy as they now are of other diseases.

A leper institution is an awful thing.

I am, Sir, yours faithfully,

ANGUS MACDONALD, M.D. Edin.,
Medical Officer in Charge.

Grenada, B.W.I., Nov. 23rd, 1914.

THE MORPHOLOGY OF THE TYPES OF TUBERCLE BACILLI FOUND IN MAN.

To the Editor of THE LANCET.

SIR,—In his interesting article which appeared in THE LANCET of Nov. 21st, Dr. Horace R. Wilson calls attention to the importance of observing the morphological characters of the tubercle bacilli in a tuberculous case as an aid in prognosis.

For many years past the great importance in prognosis of such observations has been emphasised by Carl Spengler in his published researches on tuberculosis.[1] In the routine examination of tuberculous material by his methods careful attention is always given to the determination of the degree of injury manifested by the sheaths of the tubercle bacilli. Sheath injury may arise from causes other than an increase of the immunity of the patient; hence care must be taken to minimise errors due to such causes. In the lectures on the bacteriology of tuberculosis delivered by me during the past two years in the bacteriological laboratories of King's College much attention has been devoted to the qualitative investigation—as distinct from the usual quantitative examination—of tubercle bacilli in tuberculous material. It may be helpful to note that Spengler's "pikrin" method and the modifications of it introduced by Kirchenstein and by the writer are specially adapted for the qualitative and structural investigations referred to; the Ziehl method is unsuitable.

Dr. Wilson mentions that two distinctly different types of tubercle bacilli are found in human sputa—viz., Type 1, short, plump bacilli taking a uniform stain; Type 2, longer, thinner bacilli with clear (unstained) spaces numerous and well marked, the stain less deeply taken. It is important to note that the two types of tubercle bacilli which Spengler has described, and which he has isolated from human sputa, have characters quite different from Types 1 and 2 mentioned above. Spengler maintains that in most cases it is possible to isolate two types of tubercle bacilli from tuberculous man—viz., typus humanus brevis (Koch), and typus humano-longus (Spengler). From his investigations he has concluded that by his methods it is possible microscopically to distinguish between these two types if the bacilli are fully developed.[2] The characteristics of the types have been given in a comparative form in previous contributions on the subject[3]; the following is a brief summary of the more important of the morphological details: 1. Humanus brevis is a thin, short type of tubercle bacillus. 2. Humano-longus is thicker and longer than humanus brevis; it is a bovinoid type of tubercle bacillus, closely related to, but not identical with, the true bovine tubercle bacillus of cattle. Both types when uninjured and fully developed stain uniformly with the "pikrin" method. Splitter formation—the so-called "beading"—occurs in both types and is associated with degenerative changes in the bacillary sheath to which allusion has already been made.

Although, as Dr. Wilson states, some investigators have been unable by their methods to distinguish microscopically between the bovine and human types of tubercle bacilli as defined by these workers, nevertheless it must be noted that up to the present no researches have been conducted by them upon the two types of tubercle bacilli in tuberculous man as described by Spengler.

In future investigations it seems very desirable that the subject should be approached from Spengler's standpoint.

I am, Sir, yours faithfully,

WALTER H. FEARIS.
Cardiff and County Public Health Laboratory, Dec. 11th, 1914.

[1] Spengler: Deutsche Medicinische Wochenschrift, 1907, No. 9.

[2] Spengler: Zeitschrift für Experimentelle Pathologie und Therapie, 1909, Band vi.; Deutsche Medicinische Wochenschrift, 1907, No. 3.

[3] W. H. Fearis: The Treatment of Tuberculosis by Means of Immune Substances (I.K.). An introduction to Spengler's work on Tuberculosis and Immunity (John Murray), p. 3 et seq. Brit. Med. Jour., March 14th, 1914, p. 625.

THE INCIDENCE OF PLAGUE IN EUROPE.

To the Editor of THE LANCET.

SIR,—My attention has been called to an article by Mr. C. Strickland entitled "The Incidence of Plague in Europe" in THE LANCET of Nov. 14th last, in which he states that the probability of a plague epizootic occurring among brown rats in this country is 250 times less in the summer than in the winter. This conclusion is based upon data extracted from reports made to the Local Government Board in connexion with the epizootics of rat plague which occurred in East Anglia in the winter of 1910 and the autumn of 1911 respectively.

Mr. Strickland's argument appears to be somewhat as follows: Martin and Rowland found in the winter of 1910 a flea-rate of 1 flea per rat associated with an 11 per cent. plague epizootic,

while in the summer of 1911 Strickland and Merriman found a flea-rate of 4·5 associated with a 0·2 per cent. epizootic. Hence, in spite of the flea factor being 4·5/1 stronger in the summer than in the winter, the adverse factor (which he assumes to be lessened density of rat population) is so powerful that the epizootic resulting is 0·2/11 or 1/55, and thus the chances of infection are lessened nearly 250 times.

The conclusions arrived at by Mr. Strickland give quite an erroneous impression with regard to the relative severity of the two epizootics, as he has failed to take into consideration the widely different circumstances in which the two investigations were conducted. The figure "11 per cent." that he quotes from Martin and Rowland's paper refers to the percentage infection found among 123 rats collected from specially selected areas where epizootic plague was either suspected or actually known to exist at the time of the inquiry. The flea-rate per rat for this series was, moreover, not 1, as Mr. Strickland states, but actually 2·7. During the investigation in 1911 some 15,000 rats were examined from a wide area comprising over 200 parishes, only 19 of such parishes proving to be plague infected. From personal knowledge I have no hesitation in stating that in some of these infected districts the rat mortality from plague was very high. It is quite true that only 35 plague-infected rats actually came to hand during the inquiry, but this result was not due to any scarcity of infected material, but rather to the fact that as soon as plague was officially diagnosed in any parish the supply of rats brought to the laboratory for examination from that source was immediately cut off. From these considerations it is apparent that the figures "0·2 per cent." do not give any indication of the percentage infection in the infected areas and that the assumption contained in Mr. Strickland's paper is quite unjustified.

I am, Sir, yours faithfully,

RALPH ST. JOHN BROOKS.

Lister Institute, Chelsea Gardens, S.W., Dec. 15th, 1914.

ANTISEPTIC TREATMENT OF WOUNDS.

To the Editor of THE LANCET.

SIR,—I have read in THE LANCET of Nov. 21st an address on the Treatment of Wounds in War by Sir W. Watson Cheyne. This arresting paragraph occurs in the address:—

> Giving my own experience of naval cases, all the wounds which I have yet come across have been septic, some of them very badly so; I hear also that those who are working at the army base hospitals are having a large amount of sepsis in shell and shrapnel wounds.

At the conclusion of his address Sir W. Watson Cheyne says:—

> The question I have been referring to is one of tremendous importance, and I entreat you to give it your most earnest consideration ..... Any day we may hear of the death of our boys in battle. If they die on the field of battle, they at least die nobly in fighting for their country and for the safety of those they leave behind. Surely it makes it still harder for us to know that if they escape death on the field of battle, they may still, as the result of imperfect disinfection of the wounds, die from sepsis, or be maimed for life. I beg of you to consider this matter calmly, and logically, and without prejudice, and see that every possible means is taken to avoid this great calamity.

These moving and eloquent words of the President of the Royal College of Surgeons of England are my reasons for writing this letter to you. For many years the treatment of injuries has been my principal work in Lancashire. Until recent years, do what I would, some 10 per cent. or more of such injuries became infected. For a long period I endeavoured by mechanical means and by the aid of antiseptics to prevent the infection of skin wounds, compound fractures, burns, &c., and finally came to the conclusion that it was impossible mechanically to remove septic organisms from an open wound, or to ensure by the application of antiseptics the destruction of infecting bacteria by any means known to me then.

About 10 years ago I began a research having for its object the elimination of sepsis from recent wounds. Lister's first work on the treatment of compound fractures was the inspiration for this research. He stirred up with the blood carbolic acid so as to form a sort of paste which filled up the wound, and by this means he was successful in avoiding sepsis in a large percentage of cases. It will, I think, be admitted that healing by aseptic blood clot and granulation is the object to be aimed at in accidental injuries where there is so much destruction and injury of the tissues that primary union of the skin is impossible. The idea in my mind when I began the research was to utilise the exudate from a recent wound—e.g., blood serum, lymph, &c.—for the protection of the injured tissues. Could this exudate be acted upon by an antiseptic solution in such a manner as to prevent septic infection of the wound? After many trials and many disappointments with various antiseptics I at length hit upon a satisfactory method of treatment.

It is, of course, well known that mercuric chloride, $HgCl_2$, is one of the most powerful germicides, but this agent in the pure state in solution combines so readily, and, as it were, so firmly with albumin, forming an albuminate of mercury, that it is unsuitable and ineffective for the treatment of recent wounds. I quote from "The Chemical Basis of Pharmacology," Francis and Fortescue-Brickdale:—

> The degree of dissociation which a substance undergoes on solution in water can play an important part in its action on the organism. Paul and Kronig investigated the antiseptic power of mercuric chloride, using the spores of B. anthracis, and found that in equimolecular solutions, the chloride was the most powerful antiseptic, then the bromide, and that the cyanide had least action. This corresponds to the degree of dissociation which takes place in the three solutions. The same authors investigated the antiseptic powers of a solution of perchloride of mercury and common salt. Many years ago Bacelli, when advising intravenous injections of mercurial salts in cases of syphilis, employed a solution of the perchloride, mixed with sodium chloride in the proportion of 1 to 3, which he stated to be more effective in actual practice.
>
> Paul and Kronig have shown that the actual process is as follows: A double salt is formed ($HgCl_2NaCl$) which dissociates into positive sodium ions and negative complex ions of mercury and chlorine. The latter are inactive from an antiseptic point of view, but a certain amount of secondary dissociation of the complex negative ions occurs, resulting in the formation of the active mercury ions, though to a smaller extent than when an equimolecular solution of mercuric chloride alone is employed. The action is thus hindered, but in practice the increased solubility which is obtained by the addition of salt, more than counterbalances the decreased ionic dissociation.
>
> The action of a drug appears to depend upon its possessing (1) some group of atoms capable of exerting a specific effect on the cell, and (2) another group or side chain capable of entering into some kind of chemico-physical relationship with certain cells, whereby the first is enabled to produce its action.

In experimenting on these lines (but in ignorance

until quite recently of these observations) it occurred to me that the addition of calcic chloride to a solution of mercuric and sodic chloride might cause more rapid coagulation of the exudate than the mercury and salt alone; and that the double salt $HgCl_2CaCl_2$ would combine more loosely with albumin.

This I found to be the case, and also that the antiseptic power of the molecule thus formed was increased considerably. The outcome of all my experiments, which are too tedious and too voluminous to recapitulate here, was a solution containing mercuric, sodic, calcic, and potassic chlorides. To this compound the short name "hydrion" may be applied. That is "hydr-(argyrum)ions."

The formula for the antiseptic I use is as follows:—

	Grains.	Grammes.
Mercuric chloride ($HgCl_2$) ...	4·375	0·283
Calcic chloride ($CaCl_2$)	1·86	0·12
Sodic chloride (NaCl)	34·76	2·252
Potassic chloride (KCl)	0·075	0·005

Hydrion is therefore a double chloride of mercury and calcium dissolved in normal saline solution with the addition of a trace of potassium chloride. These quantities are made up into a 40-grain solid tablet. This tablet is very hygroscopic and must be kept dry. One of these tablets dissolved in a pint of cold water (or two to one litre making a rather stronger solution) forms the ordinary antiseptic solution which I use habitually for recent wounds on the hands, feet, head, and exposed parts generally. A somewhat weaker solution should be used on delicate skins, or on a skin which is usually covered by clothing. A much stronger solution is used in the first immersion of a very dirty wound. This solution is a thoroughly efficient sterilising agent. It is highly labile, and its chemico-physical properties admit of rapid dissociation in the medium in which it is required to act. It has great diffusibility; its osmotic power is great, and its powers of uniting with albumin are such that it is capable of being incorporated with the exudate from a wound in such a manner as to cause rapid coagulation of the exudate, thus plugging the vessels and wound at once with a tenacious clot in which bacteria do not grow. This coagulum either destroys the bacteria which may be present in the wound or it inhibits their growth and development.

To give an example. A man sustains a crushed hand at his work by being caught in a machine. His fingers are severely lacerated, he has compound fracture of several bones, tendons are exposed, &c. No attempt whatever is made mechanically to cleanse the wound. Any obvious gross foreign bodies are removed; the hand is dipped for five minutes in the *cold* solution; the parts are very gently pressed into something like normal position; all active bleeding points are compressed with forceps—no ligatures should be used. The whole of the injured area—that is, every particle of raw surface—is carefully covered with thin *pure* gutta-percha tissue. A *small* amount of wood-wool wadding is saturated with the solution and firmly pressed over the gutta-percha tissue. The whole of the injured part is then covered with an ordinary bandage, the object aimed at being to put on the *minimum* of dressing. The bandage should not be tight, but it should be firm; and finally the hand (bandage and all) is dipped into the solution. Tablets are given to the patient, one of which he is told to dissolve in a pint of *cold* water and to immerse the hand (dressing and all) at intervals of six hours. Such a dressing, bloodstained and dirty as it may become, can be kept on for three or four days without any risk of infection of the wound. My practice when there is much oozing in a bad wound is to change the dressing in 24 hours and to wash the whole injured area in the solution, then to deal with the wound according to its requirements—to suture the skin, to adjust broken bones, suture tendons, &c. I never use a splint in such an injury, but I encourage the man to move his fingers from the very beginning. No swelling will occur, no redness nor pain; but the skin which has been subjected to the action of the solution will be wrinkled, bleached, and soft, so that the cuticle can be easily removed together with all dirt and foreign matter on the hand. The coagulated blood clot should be disturbed as little as possible. The continued application for days or weeks of the solution does not injure the living tissues, and it is remarkable how rapidly the wound will heal under its influence. It is essential to keep the raw surface moist with the solution and covered with the gutta-percha tissue throughout the healing process.

Wounds inflicted on the battlefield should, at the earliest possible moment, be washed with the solution of hydrion, covered with gutta-percha tissue and then a thin layer of wood-wool or gauze (taking great care that the latter is not in contact with the wound), with a not tight bandage over all; the whole dressing should be soaked in the solution or thoroughly wetted in it every six hours or so. This method is simple, cheap, quick, and efficient. It must be understood that my experiments have been made on wounds infected with the ordinary pyogenic bacteria. It may be that the more resistant anaerobic spore-bearing organisms, such as those of tetanus, spreading gangrene, or gas gangrene, may not be affected by hydrion. I do not know, but in cases where their presence is suspected I would advise a stronger solution, to be applied more frequently. My recent work shows more than 1000 consecutive cases of injuries where there has been a breach of the skin surface treated within 24 hours of the infliction of such an injury without one case of infection of the living tissues. The use of the guttapercha tissue is essential. It keeps the clotted exudate moist with the solution; it prevents evaporation; and, most important of all, *it does not stick* to the clot, so that when the dressing is removed *the clot is not pulled away* (as it is with a gauze or other cellulose dressing), nor are the healing granulations injured and made to bleed. It also protects the clot from direct contamination through the dressing, but it allows constant irrigation of the wound by capillary attraction and osmosis at the edges of the gutta-percha tissue.

I have not had time to verify all my references nor to acknowledge my indebtedness to the many authors I have consulted on this subject. In some further communication I hope you will allow me to rectify this omission in a paper in which I will go more thoroughly into the experimental data upon which my method is based. If those members of my profession who do me the honour to read this letter are inclined at first to exclaim with Naaman the Syrian: "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel?" I hope they will do as Naaman did on second thoughts. If they will try this method of dressing a recent wound I believe the results will surprise

them. I shall be glad to give further information on the subject to any colleague who cares to write to me.

Hydrion can be obtained in tablet form from Messrs. Hough, Hoseason, and Co., Sun Buildings, Bridge-street, Manchester, who have taken endless trouble in the preparation of these tablets for me.

I am, Sir, yours faithfully,

THOMAS LISSAMAN.

Mornington House, Bolton, Dec. 7th, 1914.

*** Combinations of the perchloride of mercury with the alkaline chlorides have been proposed for some time with the view of producing a powerful antiseptic effect without the irritating properties of the mercuric salt alone; while so combined mercury does not quickly coagulate the albumin. The addition of calcium cloride is, however, a possibly important suggestion, having regard to its effect on the coagulability of the blood, and a looser combination with albumin is formed than when the perchloride is used alone.—ED. L.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

DURING the last week the organisation of the Fund has been proceeded with steadily, and promises of coöperation have been received from universities, provincial centres, and individual medical men and pharmacists. A comprehensive scheme is at present being organised to appeal to all the doctors and pharmacists of Scotland on behalf of their Belgian brethren. The proposal here is for a large committee with representatives of the universities, the Royal Colleges of Physicians and Surgeons, Royal Faculty, and the Society of Pharmacists of Scotland. Progress is being made, we understand, with the movement. From Dublin we publish a long list of subscriptions received or promised, which has been forwarded to us from the Royal College of Physicians of Ireland. In Belfast the Ulster Medical Society and the Ulster branch of the British Medical Association are proposing to draw the attention of their members to the movement.

At a meeting of the Executive Committee of the Fund, held at the offices of the British Medical Association on Thursday, Dec. 10th, Mr. E. T. Neathercoat, Vice-President of the Pharmaceutical Society of Great Britain, was elected a member of the Committee, and the following nominations upon the General Committee, made by the Pharmaceutical Society of Great Britain, were accepted unanimously:—Mr. Edmund White, President of the Pharmaceutical Society of Great Britain; Mr. J. H. Cuff, Mr. W. H. Gibson, Mr. R. L. Gifford, Mr. A. Hagon, Mr. P. F. Rowsell, Mr. G. E. Pearson (Messrs. Burroughs, Wellcome, and Co.), Mr. F. P. Sargeant, Mr. W. S. Glyn-Jones, M.P., Mr. J. C. Umney, Mr. D. Gilmour, Mr. J. P. Gilmour, Mr. W. L. Currie, Mr. T. Guthrie, and Mr. J. Rutherford Hill. The addition to the General Committee also of the names of Mr. Lynn Thomas, Vice-Chancellor of the University of Wales, and Professor E. W. Hope, of Liverpool, was agreed to.

ADDRESS BY PROFESSOR JACOBS.

A meeting of the Edinburgh Obstetrical Society was held on Dec. 9th, Sir J. Halliday Croom, the President, being in the chair, when Professor Jacobs, of Brussels, gave an address on "The Position of the Medical Profession in Belgium." A reception of the Fellows to welcome Professor Jacobs was given by the President, who, in introducing Professor Jacobs, eulogised the action of Belgium and referred to the great losses it had incurred in coming to the help of the Allies.

Professor Jacobs, who was most cordially received, recounted the sufferings of his country in this terrible war. When the Belgians heard of the declaration of war they to a man decided to defend their neutrality; they considered it was their duty to do so. Their country had suffered terribly. Doctors had not been spared; they were also bearing their heavy share. They were devoting their care, and if necessary their lives, to their country. But they had no medical stores; their homes and pharmacies were ruined. Was it realised what they were suffering? They were trying faithfully to fulfil their duty by remaining at their post. Some were carrying on their practice in ruined buildings. They were endeavouring to sustain their wives and children, and at the same time doing their best to alleviate the misery among them. Some doctors had had to work as navvies. Some had had to sell what had been spared by the Germans. Professor Jacobs had met a doctor who had not eaten bread for a fortnight, living only on potatoes. Some had to lie on straw for beds. One had his only pair of boots on his feet, and these falling to pieces; others had only torn garments to clothe themselves with. One had to live for three days on wayside herbs, and his wife shared his fate. Another was searching in vain for six or seven days for his wife and family in the country around. Some doctors had been imprisoned as hostages; some had been shot. One, the burgomaster of a place near Liége, was seized, had his ears cut off, his eyes gouged out, and was then shot; afterwards his head was carried on the end of the lance of an Uhlan through the town. There were widows and orphans of doctors deprived of everything. A doctor and his son were shot before the eyes of the wife. As head of the Belgian Red Cross Professor Jacobs visited a chateau, but found the Red Cross had not been respected; it had been completely destroyed and the bodies of six girls, aged from 10 to 17, were lying on the lawn. A convent containing 60 sisters had been entered by the German soldiers and every one had been violated; on the evidence of the doctor to the institution 25 were pregnant. Professor Jacobs had operated on the wife of a doctor living near Namur. Three weeks after the operation when convalescing and still in bed their house was entered by German soldiers; she was raped by seven of them and died two days afterwards. Many civilians had been shot; some places had only a few inhabitants left out of hundreds. In Dinant more than 900 had been shot and the town razed. Professor Jacobs was in his house in Brussels when the Germans occupied the city, and the military were disposed in the houses. Some came to his house and he recognised German professors whom he had some acquaintance with. He could not shake hands with them, but gave them beds. They left early in the morning, and on entering his operating room he found they had stolen his instruments. Professor Jacobs closed his address with some lantern slides of the ruins of Louvain and other places.

The Peterborough Pharmacists' Association has led the way on behalf of pharmaceutical associations with a contribution of £7 2s., and it is to be hoped that every association throughout Great Britain will follow this lead. The Pharmaceutical Society of Great Britain has sent a generous contribution of £50. A register of all Belgian pharmacists in Great Britain has been compiled, and although perhaps somewhat imperfect at the moment is being steadily amended day by day. A very large number of Belgian pharmacists have personally called on the secretary of the Pharmaceutical Society at 17, Bloomsbury-square, and for many of them work has been found. There are, however, several names registered as wanting situations, and any pharmacist who can offer suitable work should communicate with Mr. W. J. Uglow Woolcock.

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund and crossed Lloyd's Bank, Limited. These will be acknowledged by post direct, and a list will appear in THE LANCET weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, in addition to subscriptions amounting to £1444 previously acknowledged:—

	£	s.	d.
Dr. J. D. Malcolm	2	2	0
Mr. Stanley Boyd	5	0	0
Dr. R. P. Wrinch	1	1	0
Dr. W. E. M. Wright	1	1	0
Dr. F. W. Mason	1	1	0
Sir Alfred Pearce Gould	25	0	0
Dr. Eveline Cargill	2	2	0
Mr. Abram Leach	3	3	0
Mr. Irwin B. Richardson	1	1	0
Dr. J. F. Weir	0	10	6
Dr. J. C. McVail	5	5	0
Dr. G. N. Stephen	2	2	0
Dr. W. A. Bond	3	3	0
Drs. Macfie and Gray	5	5	0
Mr. E. Treacher Collins	3	3	0
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Mr. F. E. Todd	5	0	0
Dr. A. Kempe	1	1	0
Dr. J. P. Scatchard	2	2	0
Dr. A. E. Larking	2	2	0
Dr. D. Dickson	1	1	0
Dr. Lewis Reynolds	1	1	0
Mr. W. F. Haslam	2	2	0
Lady Betty Leslie-Melville	25	0	0
Dr. R. P. Jones	2	2	0
W. Herts Division of B.M.A. (per Mr. K. J. Aveling, hon. sec.)	10	7	0
Mr. F. R. U. Atkinson	1	1	0
Dr. J. Stewart	2	2	0
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Mr. Sangster	2	0	0
Mr. Meredith Townsend	2	0	0
Mr. R. H. Parker	1	1	0
Mr. W. A. Bell	2	2	0
Peterborough and District Pharmacists' Belgian Refugee Committee	7	2	0
Mr. F. Pilkington Sargeant	5	0	0
Mr. W. J. Uglow Woolcock	5	0	0
Mr. H. S. Phillips	2	2	0
Mr. J. H. Cuff	2	2	0
Mr. R. L. Gifford	1	1	0
Mr. E. F. Young	1	1	0
Mr. A. Smith	1	0	0
Mr. R. Anderson	0	10	0
Mr. W. Warren	0	5	0
Mr. G. A. G. Simpson	5	5	0
Dr. Charles Burland	1	1	0
Dr. G. A. Sutherland	2	2	0
Mr. J. P. Fennell	1	1	0
Dr. J. H. Philpot	5	5	0
Dr. F. A. Hepworth	1	0	0
Dr. J. Taylor	5	0	0
Dr. A. C. Inman	3	0	0
"A Poor Doctor"	0	3	0
Dr. J. H. Sequeira	3	3	0
Mid-Cheshire Division of B.M.A. (per Dr. A. T. Blease)	1	1	0
Dr. and Mrs. A. P. Pugh	1	1	0
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Dr. J. W. Grange	3	3	0
Dr. J. M. Clarke	2	2	0
Dr. W. S. Syme	2	2	0
Sir Frederic Eve	15	0	0
Dr. Luff	3	3	0
Dr. M. Tench	1	1	0
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Dr. T. E. Honey	3	3	0
Mr. R. B. Wall	2	2	0
Dr. Burgess	2	2	0
Mr. E. T. Neathercoat	5	0	0
Mr. Walter Hills	5	0	0
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Mr. J. E. Edwards	0	10	0
Mr. S. Summers	0	5	0
The Pharmaceutical Society of Great Britain	50	0	0
Mr. G. Lapthorn	2	2	0

By an error the addition of the letter "k" was made to the name of Dr. Mary Acworth in the list published last week.

THE IRISH COMMITTEE.

The following subscriptions have been received by the Registrar of the Royal College of Physicians of Ireland, Dr. T. P. C. Kirkpatrick, who is acting jointly with Dr. C. M. Benson as honorary treasurer and secretary of the Fund in Ireland:—

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E. M. Fannin	2	2	0
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J. F. FitzGerald	1	1	0
J. J. FitzGerald	1	0	0
Gibbon FitzGibbon	2	2	0
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M. Kearney	1	0	0
J. F. Keenan	1	0	0
G. Kelly	1	1	0
W. P. Kelly	0	10	0
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Hugh T. J. Kennedy	1	1	0
P. J. Kiernan	1	1	0
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E. Lapper	2	2	0
W. F. Law	1	1	0
W. K. Law	5	0	0
R. R. Leeper	2	2	0
W. R. Lemon	1	1	0
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Anthony M'Bride	0	10	6
P. A. M'Carthy	1	0	0
James M'Closkey	1	1	0
Joseph M'Donnell	1	1	0
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David M'Enery	2	2	0
Thomas M. M'Evoy	2	2	0
Dr. MacGrath (Dunfanaghy)	2	2	0
F. P. M'Laughlin	3	3	0
E. P. M'Loughlin	10	10	0
John M'Michael	1	10	0
J. T. Macnamara	1	1	0
P. J. Macnamara	1	1	0
R. Blake M'Vittie	2	2	0
J. C. M'Walter	2	0	0
E. J. M'Weeney	2	2	0
E. Magennis	1	1	0
W. A. Magill	2	0	0
William J. Maguire	1	1	0
R. B. Mahon	1	1	0
M. J. Malone	2	2	0
Mrs. M. J. Malone	1	0	0
Mrs. F. Manning	1	1	0
F. C. Martley	2	2	0
Everina S. J. Masey	5	5	0
J. A. Matson	1	1	0
Euphan M. Maxwell	1	1	0
G. Pugin Meldon	2	2	0
P. Merrin	1	1	0
W. K. Miley	5	0	0
A. Nixon Montgomery	1	1	0
H. C. Mooney	2	2	0
Edward E. Moore	1	1	0
George P. Moore	3	3	0
Sir John W. Moore	5	5	0
T. G. Moorhead	5	5	0
T. H. Moorhead	2	2	0
J. P. Moran	1	1	0
J. S. Morrow	1	1	0
William A. Morton	2	2	0
Edward Murphy	2	0	0
John Murphy, F.R.C.P.I.	5	5	0
P. F. Murphy	1	1	0
H. Murray	1	1	0
George Myles	1	0	0
Thomas Neill	1	0	0
George E. Nesbitt	2	2	0
J. A. Oakshott	2	2	0
C. M. O'Brien	5	5	0
Daniel J. O'Brien	1	1	0
Kennedy J. O'Brien	1	0	0
Joseph O'Carroll	10	10	0
Peter H. O'Connell	1	0	0
Daniel M. O'Connor	1	0	0

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W. J. O'Donnell	1	0	0
William O'Donnell ...	1	0	0
John O'Donoghue... ...	1	1	0
The Odontoblast Club ...	10	10	0
J. Conor O'Farrell ...	2	2	0
William H. O' Meara ...	1	1	0
Francis J. O'Reilly ...	1	0	0
Sir Lambert Ormsby ...	5	5	0
Cecil Orpin	5	0	0
Gawin Orr	2	2	0
John J. O'Sullivan ...	1	1	0
George E. Palmer	1	1	0
Joseph Petit	1	0	0
Edward Phillips	1	1	0
Blacker C. Powell	2	2	0
G. A. Pringle	2	2	0
Seton Pringle	5	5	0
Miss Purefoy	5	0	0
R. Dancer Purefoy ...	10	0	0
F. C. Purser	5	5	0
J. J. Purser	2	2	0
James Quirke	1	0	0
Sir Joseph Redmond ...	5	5	0
J. M. Redington	1	1	0
Hugh J. Ritchie	1	1	0
Lt.-Col. E. A. Roe	1	1	0
Charles H. G. Ross ...	2	2	0
J. Ralph Ross	1	0	0
W. S. Ross	0	10	0
T. J. Rossiter	1	1	0
R. J. Rowlette	2	2	0
R. A. Rutherford	1	1	0
Henry M. Scott	1	0	0
J. Alfred Scott	2	2	0
George Scriven	3	3	0
Reginald W. Scully ...	5	5	0
Edward Sheridan	2	2	0
Thomas Sinclair	5	5	0
Alfred Smith	5	5	0
T. N. Smith	2	2	0
Joseph Smyth...	1	1	0
Bethel Solomons	5	5	0
Alex. B. Stephenson ...	1	1	0
Edward Stephenson ...	1	0	0
Mary S. P. Strangman...	1	1	0
Henry Stokes	2	2	0
H. Stoney...	1	0	0
Johnson Symington ...	1	1	0
Robert J. Taaffe	1	1	0
John W. Tate	1	1	0
Thomas J. Talbot	1	1	0
James Taylor	1	1	0
Sir William J. Thompson	3	3	0
H. Sneyd Torney	3	3	0
David Turner and a Friend	3	2	0
Joseph Wallace	1	1	0
Wm. Patrick Walsh ...	1	1	0
Hugh T. Warnock	1	1	0
Joseph J. Waters	1	1	0
Robert Waters...	1	1	0
W. B. Waters	1	1	0
Louis Werner	5	5	0
Joseph T. Wigham ...	2	2	0
George S. Wigoder ...	1	1	0
T. Henry Wilson	5	5	0
Francis A. Winder... ...	1	0	0
W. A. Winter	3	3	0
Sir Stewart Woodhouse	10	10	0
John F. Woodroffe... ...	1	1	0
Sir Robert Woods	10	10	0
Albert B. Wynne	2	2	0

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments, &c., kindly contributed by the following donors since the publication of the last list:—

Dr. A. E. Whitehead, Bridlington (two contributions); Anonymous, Birvie, Montrose; Dr. M. H. Taylor, Johnstone; Dr. Norman Davidson, Peterhead; Dr. W. H. Webster, Castle Cliff, Ventnor; Dr. F. J. Allan, Public Health Department, Westminster; Dr. Harris, Southport; Dr. Isdale Greig, Kirkcaldy; Dr. F. Johnston, Birkenhead; Dr. George Hill, Birkenhead; Dr. J. H. Fardon, Birkenhead; Dr. W. A. Pierce, Birkenhead; Dr. H. L. Pearson, Birkenhead; Dr. H. N. Harrington, Birkenhead; Dr. L. D. Temple, Birkenhead; Mr. F. C. Cooling, Birkenhead; Mr. A. H. Ellithorne, Birkenhead; Mr. S. Robinson, Birkenhead; Miss Robinson, Birkenhead; Dr. R. Broughton Knowles, Primrose Club, St. James's, S.W.; Mr. William Baker, Hon. Director, Dr. Barnardo's Homes; Dr. E. W. S. Evans, Mark-lane, E.C.; Dr. Bramley Taylor, Weybridge; Dr. Willson, Weybridge; Mr. G. Carnock Sawday, Weybridge; Mrs. R. Musgrave Craven, Grove Park, Wanstead; Dr. John T. Leon, Southsea; Dr. H. W. Saunders, Eastbourne; Dr. W. J. Harnet (second contribution), Barnet; Dr. J. Robertson Crease, South Shields.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.—The governors of this institution having been unable, owing to the heavy demand for medical men for military purposes, to obtain men for the posts of three resident medical officers who have been called up for service, have appointed three medical women to fill the vacancies.

SIR JOHN STRUTHERS LECTURESHIP.—Dr. Johnson Symington, F.R.S., Professor of Anatomy, Queen's University, Belfast, delivered the second of the Struthers Lectures in the hall of the Royal College of Surgeons of Edinburgh on Dec. 16th, the subject being "Observations on the Relations of the Inner Surface of the Cranial Wall to the Outer Surface of the Brain." The lecture was illustrated by specimens, casts, and photographs.

KING EDWARD'S HOSPITAL FUND.—On Dec. 16th a meeting of this fund was held at St. James's Palace for the purpose of awarding grants. In the absence of the Duke of Teck the Speaker of the House of Commons presided, and read a letter from Lord Stamfordham expressing the King's hope that the needs of voluntary hospitals would not be lost sight of during the present crisis, and recording His Majesty's grateful appreciation of the service of those who had worked on behalf of the fund. The sum distributed amounted to £140,000.

THE WAR.

THE CASUALTY LIST.

THE following casualties among officers of the Royal Army Medical Corps have been reported since our last issue:—

Wounded: Captain G. H. Stack and Captain A. C. Osburn.

Prisoners of war: Major A. G. Thompson, Lieutenant J. R. Hayman, and Lieutenant W. A. Russell.

We trust that the unofficial report, through private sources, that Captain Angus McNab, medical officer of the 1st Battalion, London Scottish Regiment, is not dead but a prisoner of war may prove to be correct. He was officially reported killed in action.

VOLUNTARY HOSPITALS IN FRANCE.

The British Red Cross Society announces, on the authority of the War Office, that no further voluntary hospitals whatever are required at present for the British Expeditionary Force in France, and that any voluntary hospitals at present on the continent, or which may at some future time proceed to the continent, will work as base hospitals only, and will not be allowed to proceed further.

THE WAR AND THE NATION'S DRUG-SUPPLY.

The December evening meeting of the Pharmaceutical Society was devoted to the reading of five papers on the effect of the war on the nation's drug-supply, and the subject was dealt with from every standpoint. It is, of course, common knowledge that immediately after the outbreak of war there were substantial advances in the prices of a large number of medicinal products, but it is, perhaps, not so well known that had it not been for certain actions taken by the Government in consultation with an advisory committee consisting of manufacturing chemists and pharmacists prices would most probably have risen to a much higher level. As one of the contributors to the discussion, Mr. J. C. Umney, pointed out, the action of the Government by their inquiries and legislative power for acquisition had the effect of levelling prices from the range of fancy to fact within the short space of two or three weeks. The prohibition of the export of certain drugs was also an important factor in preventing the depletion of stocks. With regard to synthetic products and certain other chemical substances made in Germany Mr. C. A. Hill observed that the reason why stocks of these had not run out completely was that the high prices had checked the consumption, and in consequence the reduced demand had prevented an absolute famine. "After four months," he added, "we do not find ourselves without many necessaries." Mr. Hill discussed the prospects of the establishment in this country of the manufacture of synthetic drugs. "We have," he said, "the chemical knowledge in this country, and at a price it could be done. It may not be done all at once, but it can be done in time ..... but it means trial and error, special plant, time and money; and this raises the difficulty, of which we have naturally heard so much of late—security for the future for a sufficient period to admit an adequate return on capital outlay." Professor H. G. Greenish discussed the question from

the standpoint of vegetable drugs and advocated increased attention to the cultivation of medicinal plants in suitable parts of the British Empire. He also suggested the desirability of finding substitutes for drugs, the supply of which has been seriously curtailed. "The word substitute," he admitted, "has a somewhat objectionable sound, but if we look at the Indian and Colonial Addendum to the Pharmacopœia we shall find a number of drugs and preparations which in certain limited areas may be used in the place of others—that is, substituted for them. Thus, butea gum may replace kino, black catechu may replace catechu, and so on. Such drugs have been called 'parallel drugs'—their number is by no means small." Mr. F. W. Gamble contributed to the discussion an interesting statement with regard to the effect of the war on the supply and demand for serums and vaccines. Immediately on the outbreak of war a large demand arose for calf lymph and typhoid vaccines. There was also a demand for antisepsis vaccine and tetanus antitoxin. The amount of tetanus antitoxin occurring normally in this country is quite small, and the supply of serum ready prepared was therefore soon exhausted, but fortunately large stocks of the antitoxin were available from America, and the additional requirements are being supplied with American serum until British production is increased. Mr. R. R. Bennett dealt with the supply of drugs and chemicals the manufacture of which is protected by patents owned by Germans, and substances commonly known by a name in which there exist trade-mark rights owned by an alien enemy.

THE BRITISH RED CROSS SOCIETY.—The summary of the work for the week ending Dec. 12th states that the number of auxiliary Home Red Cross Hospitals accepted by the War Office to date is 598, containing beds for 16,950, including 678 beds, accepted during the past week, and distributed among the Army Commands, as follows:—London, 933; Southern, 5445; Aldershot, 796; Eastern, 4324; Northern, 2610; Western, 2641; Irish, 201. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals.

The British Red Cross Hospital at Netley is now in working order, and the Maxine Elliott operating theatre has been taken into use. The plans for the new extension of 200 beds given by Lord Iveagh have been prepared, and contracts are being entered into. This addition to the hospital should be in full working order by the end of January. The medical personnel is as follows:—Commandant: Surgeon Lieutenant-Colonel Sir Warren R. Crooke-Lawless. Registrar and Secretary: Captain J. L. Dickie, M.B. Senior Physician: Major C. H. Miller. Senior Surgeon: Major C. Wallace. Staff Surgeons, Physicians, and Specialists: Captain C. Christopherson, Captain J. A. Hayward, Captain D. C. Nitch, Captain H. L. Tidy, Captain A. C. Hudson, Lieutenant W. Anderson, Lieutenant M. S. Esler, Lieutenant J. C. Ferguson, Lieutenant C. Gibson, Lieutenant J. D. Lyle, Lieutenant J. F. Mackay, Lieutenant E. C. Norbury, Lieutenant C. Pearson, Mr. D. B. Pascall, and Mr. W. G. Marsden.

There have been despatched during the week 12 motor ambulances and one lorry to Dunkirk; six ambulances, four touring cars, one lorry, and a motor cycle to Boulogne, and two ambulances to Havre. The motor ambulances which have been despatched to date number 700.

The British Hospital at Wimereux, Boulogne, which was equipped and opened in the Hôtel Bellevue on Nov. 12th, has been inspected by Colonel Barefoot and declared to be "a most excellent little unit." It has its own private fleet of six motor ambulances, motor lorry, and two cars. The military medical officer in command is Lieutenant-Colonel Copeland, R.A.M.C.; chief surgeon, Major H. M. W. Gray, F.R.C.S., R.A.M.C. (T.); the assistant surgeons, Dr. A. H. Rabagliati, M.D., F.R.C.S., and Mr. William Pearson, F.R.C.S.; the physician, Lieutenant-Colonel A. H. Lister, M.D., R.A.M.C.(T.); and the radiographer, Mr. P. Lake-Hope, M.R.C.S. The hospital has 102 beds (12 of which are for officers), and during the first month there were admitted—officers, 25; other ranks, 456; prisoners of war, 3; total, 484.

453 cases of stores and garments were despatched abroad during the week; of these, the greater portion were sent to Boulogne, Calais, and Dunkirk. 215 hospitals in this country were supplied with 479 cases of stores. In consequence of the recent lull in the fighting, the extreme pressure that existed previous to the middle of November has been considerably relaxed. Moreover, the military stores in France are at present very fully stocked, and can now supply all the army hospitals abroad with such stores as are included in the War Office Schedules. This statement is made upon the authority of the Director-General of the Army Medical Service. Under these circumstances the British Red Cross Society is only called upon to supply its own hospitals, and to supplement the military hospitals by furnishing such stores as are not included in the schedules above mentioned. It is practically certain that emergencies—similar to that which occurred in the last week of October and the first fortnight of November—will again arise. It is equally certain that, under such conditions, the Royal Army Medical Corps will gladly welcome all stores that the Red Cross Society can send into France.

The following procedure has consequently been laid down, and has been approved by the Director-General of the Army Medical Service:—1. As long as the present conditions last, and as long as no sudden and unexpected demand arises, the Stores Department of the Red Cross will continue to supply the following: (*a*) the hospitals abroad, actually under its own authority, and for which it is directly responsible; (*b*) the ambulance trains, with comforts and garments; (*c*) the rest stations, at or near Boulogne; (*d*) the ambulance ships, with garments for the wounded; (*e*) the military hospitals abroad, with such comforts and garments as are not included in the Army Schedule and which it may wish to provide. 2. Should the present conditions change and an emergency arise, involving a large and sudden increase in the sick and wounded arriving at Boulogne or any other base, the Stores Department will assist the Royal Army Medical Corps to the utmost of its power by sending over stores of all descriptions to France in large quantities and in the quickest possible time.

The consulting staff of the King George Red Cross Hospital of 1650 beds, which is being established in the buildings of the new Stationery Office, near Waterloo Station, has been announced as follows:—

Consulting Physicians: Sir Thomas Barlow, Bart., Dr. J. Mitchell Bruce, Sir Bertrand Dawson, Sir H. Bryan Donkin, Sir Dyce Duckworth, Bart., Sir James Goodhart, Bart., and Sir Seymour Sharkey.

Consulting Surgeons: Sir W. Watson Cheyne, Bart., Sir Rickman J. Godlee, Bart., Mr. J. Warrington Haward, Sir Henry Morris, Bart., and Mr. Edmund Owen.

THE FRENCH RED CROSS.—The London Committee of the Croix Rouge Française has now been reconstituted and has its headquarters at 25, Knightsbridge, Hyde Park Corner, S.W. The president is the Viscontesse de la Panouse, and the honorary committee includes the French Ambassador, the Duchesses of Norfolk, Somerset, Devonshire, Marlborough, Roxburghe, and Wellington, and a number of other distinguished ladies. The executive committee includes the president, Madame Brasier de Thuy (vice-president), Comtesse de Saint-Seine (treasurer-general), Mme. Phalempin (secretary-general), Mrs. N. Lake (honorary treasurer), Mr. P. A. Wilkins (honorary secretary), and Dr. James Donelan (medical referee). A number of surgeons have already been sent out to France, and reports received from them indicate that very satisfactory work is being accomplished. Two well-known Dublin surgeons, Mr. R. Atkinson Stoney and Mr. H. S. Meade, have lately left to serve with the French Red Cross.

The first motor ambulance convoy organised for the Croix Rouge Française by the British Ambulance Committee for service at the front is to be despatched immediately. It will consist of 25 ambulances, driven by the owners or their chauffeurs, or by mechanics appointed by the Committee. It is to be under the control of a representative of the British

Ambulance Committee in all matters relating to the management or scope of work. Thanks to the promptitude with which M. Millerand, the French War Minister, responded to the overtures made to him by the British Ambulance Committee, and the manner in which Mr. B. Peyman, the secretary of the Committee, was received at Bordeaux, the despatch of the convoy has been greatly expedited. The Committee are in urgent want of a repair lorry to accompany the convoys despatched, the cost of each such auxiliary being approximately £550, while the need of more funds for general purposes is pressing.

EUROPEAN AMBULANCE WAR FUND.—The Ambulance Department of the Order of St. John of Jerusalem has issued an appeal for renewed support because of the growing demands upon its resources. From all parts of Great Britain, from France and Belgium and Serbia, from Indian camps and hospital ships, from ambulance trains and motor convoys, come the most urgent appeals for clothing, bedding, surgical dressings, hospital comforts, and for warm garments for convalescents. Everything that is warm and useful and clean is wanted, everything that a wounded man or a sick man needs, from the time that his war-worn uniform is taken from him in hospital. The address for all contributions is the President, St. John Warehouse, 56, St. John-square, Clerkenwell, E.C.

THE Council of the Royal College of Surgeons of England has appointed Sir W. Watson Cheyne, president, to serve on the Professional Classes War Relief Council, which, as already explained in these columns, has been formed to deal with distress among the professional classes directly due to the war.

THE MILITARY EXHIBIT AT THE HISTORICAL MEDICAL MUSEUM.—At the Wellcome Historical Medical Museum in Wigmore-street Mr. Henry S. Wellcome has conceived the timely idea of collecting together a special exhibit of interesting objects and relics associated with naval and military medicine and surgery, nursing, and ambulance. In addition to items previously in the museum, such as Lord Nelson's medical cabinet and the medicine chest of the Duke of Wellington, the selection includes a number of things lent by the museum of the Royal Army Medical College, certain London hospitals, and some private owners. Among these are relics of Dr. Gillespie, R.N., who was surgeon-general to Nelson's fleet; a letter from George Washington, dated Philadelphia, Feb. 20th, 1785, enclosing $60 in payment for a denture, a fragment of which appears in the case; a case of dental instruments that belonged to Napoleon I., and a French army surgeon's field pouch of 1862, which contains also a number of pistol cartridges. In the same show-case is a sample of the first field dressing issued to the British army for use in the Crimean War, and close to it is one supplied by Burroughs, Wellcome, and Co. for use in the Ashantee War. An especially interesting exhibit is the first electric bullet detector, devised by Sir Thomas Longmore, which consists of zinc and copper plates with a field compass in circuit and attached to probes. Close by is Dr. Wilde's electric alarum bullet indicator, a much more elaborate affair, in a mahogany case with bell, battery, and forceps. Another case illustrates the development of the tourniquet, beginning with Paré's original "leather thong," near it are Morel's (1678), which consists simply of a band and cord with a twisting peg, that of Dionis (1780), in which two twisting sticks are used, and various improvements thereon made in the eighteenth century by the German Richter, the Italian Assalini, and the Frenchman Savigny. Petit's tourniquet dates from 1712, and of this various specimens are shown, including that of Freke (1734), of St. Bartholomew's Hospital, who attached a spring cog to prevent loosening. Among the tourniquets must be mentioned the actual one used in the amputation of Nelson's arm at Teneriffe in 1797. Various artery compressors, a bandage winder of the eighteenth century, and a nurse's bandage carrier resembling a lady's chatelaine in bone, are in this case. A Forfex excisoria of the sixteenth century for extracting arrowheads and various forms of bullet extractors dating from 1535 onwards are of interest. A copy of William Clowes' "Book of Observations" (1637) depicting the instruments used in treating wounds is shown. Surgical instruments gathered on the battlefields of Vittoria (1813) and Waterloo, and an early eighteenth century case that belonged to the French garrison at Strassburg, are also to be seen. Downstairs a case contains a number of models of stretchers extemporised by the Japanese from various available materials, which display remarkable ingenuity. Another case shows the evolution of the splint, beginning with those of various native tribes. The Malayan splints are of particularly fine character. There is a fine exhibit of relics of Florence Nightingale, including several autograph letters from her, two dating from Scutari in 1855; also a collection of portraits, engravings, and so on, illustrative of her career, among which must be especially noted the original oil painting by Barraud, depicting her writing a letter for a wounded soldier, the engraving of which is widely known. There is also a fine panel portrait of William Clowes (1540–1604), "Naval and Military Surgeon to St. Bartholomew's Hospital," and Physician-in-Ordinary to Queen Elizabeth. One of the most interesting and topical exhibits, however, is a couple of post-cards from a sergeant of the R.A.M.C. in France, with clever caricature pictures drawn in pencil on the special French Government post-card, and coloured with tincture of iodine and permanganate of potash by means of a brush made out of a match and absorbent cotton. They show considerable artistic talent. We have no doubt that this special section of the museum will excite no little interest.

ABERDEEN UNIVERSITY AND THE WAR.—At a meeting of the University Court of the University of Aberdeen held on Dec. 8th Principal George Adam Smith said that a provisional list up to Nov. 30th last showed that there were on naval and military service 330 graduates or alumni of the University, 266 students, and 79 students with the Officers Training Corps, making a total of 675. The Principal said this number would, no doubt, be largely added to before a final roll of members of the University on active service was completed. At the same meeting the gift was announced of £4000 from Mr. George Skelton Yuill, to encourage the practical application of the theory and science of chemistry to the arts, manufactures, and industries of Great Britain.

Sir Courtauld Thomson has been appointed Commissioner to the Order of St. John of Jerusalem and the British Red Cross Society, with the rank of lieutenant-colonel with the British army in the field, and will act under Surgeon-General Sir Arthur Sloggett, joint Director-General of the Army Medical Service and Chief Commissioner to the associated organisations.

Surgeon-General William D. C. Williams, C.B., Director-General of the Army Medical Service, Australian Imperial Forces, has reached London on business relating to the medical services of the Australian military contingent.

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that there are one or two vacancies for officers, who must be qualified medical men, in the 2nd South Midland Mounted Brigade Field Ambulance, R.A.M.C. (T). Reserve. Full particulars can be obtained of the Officer Commanding, Headquarters, Great Missenden, Bucks.

WE announce with much regret the death of Mr. Bernard Pitts, consulting surgeon to St. Thomas's Hospital and to the Hospital for Sick Children, Great Ormond-street.

DONATIONS AND BEQUESTS.—A sum of £500 has been bequeathed to the Aberdeen Royal Infirmary by the late Mr. James Ross, of Easter Beltie, advocate in Aberdeen.

SCARLET FEVER IN BELFAST.—At a meeting of the Public Health Committee of the city of Belfast, on Dec. 10th, after the receipt of reports from the medical officer of health and from the visiting physician to the Municipal Fever Hospital in regard to the serious epidemic of scarlet fever which has for years been prevalent in Belfast, it was decided to close the public or national schools for a period of five weeks—that is, from Dec. 14th until Jan. 18th of next year. The Public Health Committee hope that this interregnum will give an opportunity for any existing infection to exhaust itself, and will also afford a time during which the schools can be disinfected.

Medical News.

UNIVERSITY OF OXFORD.—At a Congregation held on Dec. 12th the following medical degrees were conferred:—

B.M.—P. W. Browne, Wadham; W. Brown, Christ Church; H. G. Morris, University; G. A. Maling and G. S. Robinson, Exeter; B. E. Wall, Lincoln; V. T. Ellwood, Pembroke; C. H. Carlton, St. John's; L. R. Broster, Trinity; F. C. Gladstone, Pembroke; and H. M. Pope, Lincoln.

UNIVERSITY OF CAMBRIDGE.—At a Congregation held on Dec. 11th the following medical degrees were conferred:—

M.B.—H. Hartridge, King's; and C. R. A. Thacker, Downing.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—As the result of the Final Fellowship Examination held on Nov. 19th, 23rd, 24th, and 25th last, for which 34 candidates presented themselves, of whom 11 acquitted themselves satisfactorily (including two candidates who have not yet complied with the regulations), the Council at its meeting on Dec. 10th conferred diplomas of Fellow upon the following nine candidates:—

Robert Neville Gesch, M.R.C.S., L.R.C.P., St. Bartholomew's and Middlesex Hospitals; Douglas Walker Hume, M.B., B.S. Lond., M.R.C.S., L.R.C.P., and Charles Noon, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Gerald Waddington Beresford, M.R.C.S., L.R.C.P., London Hospital; John Hamilton Barclay, M.B., B.S. Durh., M.R.C.S., L.R.C.P. Durham University and London Hospital; Bernard Whitchurch Howell, M.B., B.S. Lond., M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Philip Geoffry Doyne, B.A. Oxon., M.R.C.S., L.R.C.P., Oxford University and St. Thomas's Hospital; Ralph Marsh de Mowbray, M.R.C.S., L.R.C.P., St. Thomas's Hospital; and Douglas Green, M.B., B.S. Lond., Sheffield University and St. Bartholomew's Hospital.

Diplomas of Member were conferred upon the following three ladies and one gentleman who have passed the requisite examinations and have now complied with the by-laws of the College:—

Mabel Kate Bishopp and Hilda Grace Johnson, Royal Free Hospital; James Hales Parry, Cambridge University and Guy's Hospital; and Mary Woods, Royal Free Hospital.

Licences to practise Dentistry were conferred upon the following 35 candidates who have passed the requisite examinations and complied with the by-laws:—

Sidney Roland Bacon, Middlesex and Royal Dental Hospitals; James Millard Barnes, Guy's Hospital; Albert Edward Barnett and Roland Harry Bebb, L.D.S. Glasg., Birmingham University; Montague Kempston Butler, Middlesex and Royal Dental Hospitals; Henry Claude Carter, Middlesex and National Dental Hospitals; Herbert Cartman, Manchester University; Louis Edmund Claremont, Middlesex and Royal Dental Hospitals; Walter Ernest Coe, Guy's Hospital; Walter Tyrrell Cooper, Charing Cross and Royal Dental Hospitals; Cyril James Crocker, Guy's Hospital; Dennis Reginald Curnock, Charing Cross and Royal Dental Hospitals; Arthur Cyril Dean, Guy's Hospital; Eric Sutton Dickin, Liverpool University and National Dental Hospital; William Edwin Dodd, Harold Mayston Fisher, and Charlie Lewis Hicks, Middlesex and Royal Dental Hospitals; Walter Owen Hughes, Liverpool University; Philip Everard Jessop and William George Lloyd, Guy's Hospital; Arthur Helmuth John Miller, Charing Cross and Royal Dental Hospitals; Thomas Dickson Muirhead, Lancelot Eric Charles Peckover, and Arthur George Drake Pridham, Middlesex and Royal Dental Hospitals; Sydney Victor Shrimpton, Bristol University and Royal Dental Hospital; Frederick Elliott Smith, Middlesex and National Dental Hospitals; Donald Thorne, Charing Cross and Royal Dental Hospitals; Vernon John Thurston and Clement John Lethbridge Wells, Middlesex and Royal Dental Hospitals; Frank Edward Welton, Guy's Hospital; Clarence Leslie Brunel White, Middlesex and Royal Dental Hospitals; William Thomas Williams, Liverpool University; Edgar Joseph Winstanley, Middlesex and Royal Dental Hospitals; Samuel Anthony Withers, Guy's Hospital; and Francis Bernard Yonge, Middlesex and Royal Dental Hospitals.

DUBLIN UNIVERSITY: SCHOOL OF PHYSIC, TRINITY COLLEGE.—At examinations held recently the following candidates were successful:—

PRELIMINARY SCIENTIFIC MEDICAL EXAMINATION.

Botany and Zoology.—Mary Christina Sheppard, William Arthur Clarence Dowse, John Howard Blackwood Murphy, Henry Maxwell, Johannes Tobias Mynhardt, George Malone, and Jessie Gilbert.

Chemistry and Physics.—Eric James Lyndon, Mary Christina Sheppard, Alfred John Beckett, William Bruce Briggs, William Leech Young, Percival Atkin Dormer, Eric Stuart Ewing Mack, William Sweetman, Herbert William McAuliffe, Kenneth McGregor Greer, Frederick William Godbey and Henry Maxwell (equal), Jason Grant Bird, Lionel Wigoder, and James John Griffin, William Alfred Shannon, and Crawford Low Wilson (equal).

INTERMEDIATE MEDICAL EXAMINATION, PART I.

Anatomy and Institutes of Medicine.—Joseph Roland Brennan, Patrick Rocks, Joseph Godfrey Bird, Henry James Rice, Paul Herbert Shelley Smith, David Shields Prentice, Marie Annette Hadden, William Frederick Wicht, Hirsh Brill, Thomas Hugh Robinson McKiernan, Philip Augustus Hall, Rita Henry, Millicent Hamilton-Johnstone, and Robert William Pritchard.

INTERMEDIATE MEDICAL EXAMINATION, PART II.

Anatomy and Physiology.—Thomas Paul Chapman, Charles Lewers McDonogh, James Benjamin Taylor, Louis Blumberg, and Edward Lipman.

FINAL MEDICAL EXAMINATION, PART I.

Materia Medica, Medical Jurisprudence and Hygiene, and Pathology.—Esther Violet Adderly, Charles Henry Comerford, Joseph Henry Cranston Walker, Frank Healy, Cecil Francis Brady, Mortimer McGee Russell, George William Doran, Thomas Edward Bellingham Beatty (medical jurisprudence and hygiene, pathology), William Hunt (medical jurisprudence and hygiene, pathology), John Armstrong Crozier Kidd (medical jurisprudence and hygiene, pathology), Thomas William Sweetman (materia medica, pathology), Leyburne Murphy (medical jurisprudence and hygiene, materia medica), and James Edward Jameson (pathology, completing examination).

FINAL MEDICAL EXAMINATION, PART II.

Surgery.—Frederick Harris, George Brownrigg Hadden, Edward Percival H. Vickery, Geoffrey Arthur Hoffman, Eric Alfred Lumley, Edward Llewellyn Foot Nash, David Stanley Martin, Edward Gordon Fish, Hilda Maud Marsh, and Edmond Robinson.

Medicine.—Eric Alfred Lumley, Frederick Harris, Walter Joseph Ronan, Edward Percival Hadden Vickery, Bertrand Cecil Owens Sheridan, Francis Albert L'Estrange, Amos George Varian, Robert Alexander Anderson, George Brownrigg Hadden, Kathleen Dorathea Wallace, Joseph Patrick Quinn, Robert William Chapman, Frederick Robert Dougan, David Stanley Martin, and Thomas James Logan Thompson.

Midwifery.—Isaac Whitla Corkey (high marks), Edmund Duncan Tranchell Hayes, Eric William Craig, Richard Wellington Shegog, Violet Mabel Deale, Eugene John McSwiney, Herrbert Mitchell, Douglas Chetham Pim, Geraldine Murphy, Hilda Maud Marsh, George Stanton, Herbert Daniel, Christopher Charles Albertyn, Edward Mannix, Andrew William Palethorp Todd, Sydney Walter Fisher, Francis Joseph Ord King, Maurice Baylis King, David Henry Hall, Cecil McLaren West, Joseph Henry Cranston Walker, Alfred William Darnley Magee, Arthur Cyril Bateman, George Joughin, Audrew John Horne, and David Stanley Martin.

FINAL DENTAL EXAMINATION (B. DENT. SC.).

Herbert Wright.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CORMAC, H. DOVE, M.B., M.S. Madras, has been appointed Medical Superintendent of the Cheshire County Asylum, Parkside Macclesfield.

DAVIES-COLLEY, ELEANOR, M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Surgical Registrar to the Royal Free Hospital.

GUNNING, R. C., Lieutenant-Colonel, R.A.M.C. (retired), has been appointed by the War Office Commandant of the American Women's War Relief Fund Hospital at Paignton (Devon).

JOHNSTON, T. B., M.B., Ch.B. Edin., has been appointed Lecturer and Demonstrator in Anatomy at University College, London.

KELLY, JOHN B., L.R.C.P. & S. Irel., has been appointed Temporary Medical Officer for the Bleadon District by the Axbridge (Somerset) Board of Guardians.

LOWRY, ELEANOR, M.B., B.S. Lond., has been appointed Clinical Assistant to the Throat, Nose, and Ear Department of the Royal Free Hospital.

MARTIN, DOUGLAS, M.B., Ch.B. Edin., has been appointed School Medical Officer and Assistant Medical Officer of Health to the Borough of South Shields.

O'DONOVAN, W. J., M.D. Lond., M.R.C.P. Lond., has been appointed Acting Assistant Physician to the Royal Free Hospital.

PICKARD, ELLEN M., M.D., B.S. Lond., has been appointed Medical Registrar to the Royal Free Hospital.

PRICE, FREDERICK W., M.D., Edin., M.R.C.P. Lond., has been appointed Honorary Assistant Physician to the National Hospital for Diseases of the Heart.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary £150 per annum, with rations, laundry, and residence.

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.

BETHNAL GREEN INFIRMARY, Cambridge-road, N.E.—Assistant Medical Officer. Salary at rate of £200 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRMINGHAM CITY MENTAL HOSPITAL, Rubery-hill.—Female Junior Assistant Medical Officer. Salary £240 per annum, with apartments, board, laundry, &c.

BIRMINGHAM, LITTLE BROMWICH FEVER HOSPITAL.—Assistant Resident Medical Officer. Salary £200 per annum, with board and residence.

BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: Second Assistant Medical Officer. Salary at rate of £210 per annum. Third Assistant Medical Officer. Salary at rate of £170 per annum. Fourth Assistant Medical Officer. Salary at rate of £160 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. All with apartments, rations, laundry, and attendance.

BIRMINGHAM, YARDLEY-ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRADFORD, ST. LUKE'S HOSPITAL AND UNION HOUSE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

BRISTOL, CITY AND COUNTY OF.—Temporary Assistant Medical Officer. Salary at rate of £350 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £100 per annum with board, residence, and laundry.

BURLEY-IN-WHARFEDALE, SCALEBOR PARK ASYLUM.—Assistant Medical Officer. Salary £250 per annum, with rooms, board, attendance, and washing. Or Locum Tenens for winter months. Salary £5 5s. per week.

BURY COUNTY BOROUGH.—Temporary Assistant to Medical Officer of Health. Salary at rate of £350 per annum.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Senior House Surgeon and Junior House Surgeon, unmarried. Salaries £100 and £90 per annum respectively, with board, lodging, and washing.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Third Junior Assistant Medical Officer. Salary £250 per annum, with quarters, board, washing, &c.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Two House Surgeons for six months. Salary at rate of £140 per annum each, with board, residence, and laundry.

CARDIFF, KING EDWARD VII. WELSH NATIONAL MEMORIAL ASSOCIATION.—Assistant Resident Medical Officers at Sanatoria. Salary £250 per annum and maintenance.

CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

CHESTER, CITY AND COUNTY OF THE CITY OF.—Assistant Medical Officer of Health. Salary £300 per annum.

CHICHESTER, WEST SUSSEX COUNTY MENTAL HOSPITAL.—Second Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, and attendance.

CITY OF LONDON UNION INSTITUTION AND INFIRMARY, 42, Clifton-road, Lower Clapton, N.E.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, rations, and washing.

CITY OF WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

CLIFTON, YORK, NORTH RIDING ASYLUM.—Locum Tenens Medical Officer. Salary £250 per annum, with apartments, board, &c.

CROYDON GENERAL HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with residence, board, and laundry.

DORSET COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary at rate of £250 per annum.

DOUGLAS, ISLE OF MAN, NOBLE'S HOSPITAL.—Resident House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

DURHAM COUNTY COUNCIL.—Assistant School Medical Officer. Salary £300 per annum.

EAST WILTS UNITED DISTRICTS.—Medical Officer of Health and Assistant School Medical Officer. Salary £450 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Ten Qualified Clinical Assistants in Out-patient Departments.

FALKLAND ISLANDS.—Assistant Colonial Surgeon. Salary £400 per annum.

GENERAL POST OFFICE.—Headquarters Medical Department (Female Staff).—Female Assistant on Headquarters Medical Staff. Salary £180 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

HUDDERSFIELD, STORTHES HALL ASYLUM, Kirkburton.—Assistant Medical Officer or Locum Tenens. Salary £250 per annum, with rooms, board, attendance, and washing. Salary for Locum Tenens £5 5s. per week, with rooms, board, attendance, and washing.

JHARIA MINING SETTLEMENT, Bihar, India.—Chief Sanitary Officer. Salary Rs.1200 (£80), rising to Rs. 1500 (£100) a month, with house.

KIDDERMINSTER MEDICAL ASSOCIATION, 4, Lion-street.—Resident Medical Officer. Salary £350 per annum, with residence, rates and taxes, midwifery fees &c.

LEEDS HOSPITALS FOR INFECTIOUS DISEASES AND TUBERCULOSIS.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £170 per annum, with board, lodging, and washing.

LEEDS PUBLIC DISPENSARY.—Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LEICESTER ROYAL INFIRMARY.—Ophthalmic House Surgeon and Assistant House Physician (joint post). Also Two Assistant House Surgeons. Salaries at rate of £100 per annum, with board, apartments, washing, and bonus. Also Two Assistant Resident Medical Officers for six months, with board and apartments.

LIVERPOOL STANLEY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, residence, and laundry.

LIVERPOOL, WEST DERBY UNION, ALDER HEY HOSPITAL, West Derby.—Two Assistant Resident Medical Officers, unmarried. Salaries £250 per annum, with board, &c.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon at Female Hospital for six months. Salary at rate of £130 per annum, with rooms, board, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER, ANCOATS HOSPITAL, Mill-street.—Resident Medical Officer. Salary £130 per annum, with board and apartments. Also Resident House Physician. Salary £80 per annum, with board and apartments.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER EDUCATION COMMITTEE.—Female Assistant School Medical Officer, unmarried. Salary £300 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Resident Surgical Officer. Salary £90 per annum, with board and residence. Also House Surgeon for three or six months. Salary at rate of £70 per annum, with board and residence.

MANCHESTER, VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Female Resident Medical Officer for six months. Salary at rate of £80 per annum, with rooms, board, and laundry.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

MORPETH DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with rooms, coal, gas, and attendance.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £250 per annum, with board, lodging, &c.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Assistant School Medical Officers (One Male and One Female). Salaries £300 per annum.

NEWCASTLE-UPON-TYNE POOR-LAW INSTITUTION.—Second Assistant Resident Medical Officer. Salary at rate of £175 per annum, with apartments, rations, and washing.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female House Physician, House Surgeon, and Obstetric Assistant. Also Resident Medical Officer to House of Recovery, New Barnet. Salary £60 per annum.

NEWPORT (MON.). ROYAL GWENT HOSPITAL.—Reside nt Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry. Also Honorary Medical Officer to Ear, Nose, and Throat Department.

NORTHAMPTONSHIRE COUNTY COUNCIL.—Assistant School Medical Officer. Salary £25 per month.

NORTH RIDING OF YORKSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

NOTTINGHAM, RANSOM SANATORIUM, Sherwood Forest, Mansfield.—Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

OXFORDSHIRE EDUCATION COMMITTEE.—Temporary School Dentist. Salary £250 per annum.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Resident Medical Officer. Salary at rate of £150 per annum, with board and washing.

ST. GEORGE'S HOSPITAL, Hyde Park Corner, S.W.—Surgical Registrar. Salary £200 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

ST. THOMAS'S HOSPITAL.—Ophthalmic Surgeon for Out-patients.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SHEFFIELD CITY HOSPITALS (INFECTIOUS DISEASES AND TUBERCULOSIS).—Assistant Medical Officer. Salary £160 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried Salary £80 per annum, with board, lodging, and washing

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SPECIAL HOSPITAL FOR OFFICERS (LORD KNUTSFORD'S APPEAL).—Resident Medical Officer. Salary at rate of 280 guineas per annum.

STOKE-ON-TRENT COUNTY BOROUGH TUBERCULOSIS SANATORIUM.—Resident Assistant Medical Officer for Stanfield Sanatorium and Assistant at the Tuberculosis Dispensary. Salary at rate of £250 per annum.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon and House Physician, unmarried. Salary at rate of £120 per annum each, with board, residence, and washing.

STOKE-UPON-TRENT UNION INSTITUTION AND HOSPITAL, London-road, Newcastle, Staffs.—Assistant Resident Medical Officer, unmarried. Salary £200 per annum, with rations, apartments, and washing.

SUNDERLAND ROYAL INFIRMARY.—Senior Resident Medical Officer and Two Junior House Surgeons. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, attendance, &c.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

TRINIDAD LUNATIC ASYLUM.—Assistant Medical Superintendent. Salary £250 per annum, £80 ration allowance, bachelor's quarters.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £150 per annum, with rooms, board, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

UNIVERSITY OF LONDON.—Examiners.

WAKEFIELD, CLAYTON HOSPITAL.—Senior House Surgeon. Salary £160 per annum, with board, lodging, and laundry.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, and attendance.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM COUNTY BOROUGH.—Assistant School Medical Officer. Salary £300 per annum.

WEST HAM UNION.—INFIRMARY, Whipps Cross-road, Leytonstone, N.E.: Second Assistant Resident Medical Officer. Salary £250 per annum, with usual residential allowances. SICK HOME, 95, Forest-lane, Forest Gate, E.: Deputy Medical Officer. Salary £250 per annum, with usual residential allowances.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £170 per annum, with board, apartments, and washing. Also Female Junior House Surgeon. Salary £130 per annum, with board, apartments, and washing.

WILTS COUNTY COUNCIL GENERAL EDUCATION COMMITTEE.—Temporary Assistant School Medical Inspector. Salary at rate of £300 per annum, with travelling and maintenance allowances.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

WORKSOP VICTORIA HOSPITAL AND DISPENSARY.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, light, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Hamilton, in the county of Lanarkshire, and at Rathfriland, in County Down.

Births, Marriages, and Deaths.

BIRTHS.

BALDWIN.—On Dec. 7th, at Manchester-square, W., the wife of Aslett Baldwin, F.R.C.S., of a son.

EVANS.—On Dec. 7th, at Church-street, Kidderminster, the wife of O. C. Penrhys Evans, M.D., of a daughter.

SAMBON.—On Dec. 10th, at Woodlawn, Shoot-up Hill, N.W., the wife of Louis Westenra Sambon, of a son.

MARRIAGES.

COLBATCH CLARK—DUDDING.—On Dec. 10th, at St. Lawrence's Church, Canon Pyon, Herefordshire, Henry Colbatch Clark, M.R.C.S., L.R.C.P., of Wellington, Hereford, to Florence Mary, eldest daughter of the late Frederick Walter Dudding and Mrs. Dudding, of Bayham House, Ipswich.

SIMPSON—BEDELL-SIVRIGHT.—On Dec. 12th, at St. Paul's Church, Sheerness, Alexander Simpson, Surgeon, Royal Navy, to Catherine, second daughter of W. H. R. Bedell-Sivright, of Southouse, Mid-Lothian.

DEATHS.

HARRIS.—On Dec. 11th, at Shanklin, Deputy Surgeon-General William Henry Harris, late I.M.S. of Madras, in his 85th year.

MORETON.—On Dec. 5th, at Karlscroft, Tarvin, Cheshire, James Earl Moreton, F.R.C.S., aged 83 years.

PITTS.—On Dec. 13th, after a long illness, Bernard Pitts, M.A., M.C. Cantab., F.R.C.S. Eng., Consulting Surgeon to St. Thomas's Hospital and to the Hospital for Children, Great Ormond-street, aged 66 years.

TURNER.—On Dec. 9th, at "Holmwood," Bournemouth, Henry Gunton Turner, M.R.C.S., aged 68 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN JAMAICA.

Sir William Henry Manning, K.C.M.G., C.B., Governor of Jamaica, in his report on the colony for the year 1913–14, just presented to Parliament, devotes considerable space to matters concerning health and sanitation. He estimates the present population of the colony at 864,864, but there is always a good deal of migration going on; and the statistics of marriages, births, and deaths are calculated on the mean island population for the year, which in 1913 was 863,427. The marriage-rate per 1000 was 3·1, the birth-rate 35·3, and the death-rate 21·7. Of the births 64·5 per 100 were illegitimate, as compared with 63·3 per cent. for the decade. The general death-rate showed a decrease of 3·4 per 1000, and the proportion due to deaths of infants under 5 years of age showed a reduction of 4·3 per cent. There was great variation in both the birth- and death-rates in different parts of the island.

Deaths from malaria in Kingston numbered 22, as against 25 in the previous year, and from fever (not otherwise defined) 21, against 29. There was no vote for the abatement of malaria during the year, and the Commission was dissolved, leaving the works contemplated not quite complete. It is satisfactory to note that the position reached in 1912–13 has been maintained, and that there has been a further slight decrease in the number of victims from this malady. It must, however, be recollected that until measures for abatement of malaria are universal throughout the island the disease cannot be wholly eliminated from the statistics of Kingston, as the general penitentiary, the lunatic asylum, the public hospital, and other institutions draw their inmates from all parts of the colony, and many persons come from the country for medical advice and treatment. Emigrants returning from the malarious portions of Central America also contribute materially to the number of cases.

Salvarsan was utilised in the treatment of yaws and syphilis in the public general hospitals in 778 cases, and in 90 at out-stations, the patients returning to their homes after the operation on these last-mentioned occasions. One death occurred in hospital, and 46 patients remained under treatment, while all the others are reported to have had their symptoms cured. Reports have also been received of 40 cases treated in the Kingston and St. Andrew Poor-house, and 14 in the St. Ann Poor-house. One patient died 21 days after a second injection, and one 73 days after the first (but unfortunately no post-mortem examination was made in either case and the causes of the deaths have not been ascertained), and one remained under treatment, the remainder having their symptoms cured or much improved. Some of these cases were of 7 to 10 years' duration, and apparently hopeless under the treatment formerly resorted to, the patients lapsing into pauperism and becoming inmates of the poor-houses. Nearly all of them had a complete recovery and several were able to return to work. This remedy promises under proper safeguards to solve the problem of preventing the ravages due to yaws and syphilis. There were 11,945 attendances on yaws patients without salvarsan treatment, 6272 being first visits. The deaths registered as due to yaws and syphilis during the year numbered 244.

A special feature of the medical returns is the decrease of 2347 in the number of cases of malaria treated in the hospitals and of 25 in the mortality from that disease as compared with the previous year. The Registrar-General's return shows a decrease of 168 in the total number of deaths in the island attributed to malaria, equal to 31·21 per cent. Eighty of the deaths are not medically certified, but as the percentage of decreases shows so near an approximation to the hospital cases the figures may be regarded as substantially accurate. The superintending medical officer has submitted no comments on these figures, but he has furnished reports by various district medical officers showing in most cases that some attention is being paid to the question of mosquito reduction by the local health authorities. It is understood that the late Malaria Commission, acting as they believed on the theory and practice which has proved effective elsewhere, endeavoured to abate the breeding of malarial mosquitoes and to diminish the sources whence the reduced number of mosquitoes could become infected, thus rendering as many as possible harmless as transmitters of the disease.

The number of persons thymolised for hook-worm during the year was 8204.

The total number of patients treated in the public general hospitals during the year was 30,716, and the number of deaths in hospitals was 617. Of the latter, 54 were due to malarial fever, 5 to skin diseases, 91 to diseases of the digestive system, 30 to local injuries, 45 to diseases of the respiratory system, 38 to diseases of the circulatory system, 7 to diseases of the cellular tissue, 17 to ankylostomiasis, 15 to syphilis, 16 to anæmia, and 1 to blackwater fever.

Dr. Seidelin, of the Liverpool School of Tropical Medicine, paid a visit to the island for the purpose of investigating "vomiting sickness," and Dr. Scott, the Government bacteriologist, was associated with him in so far that he assisted him in certain portions of his work, the Government laboratory being placed at his disposal. By the process of eliminating cases, loosely termed "vomiting sickness," which were traceable to specific causes, and grouping the remainder which showed similar characteristics, it was hoped that the disease would be recognised, but the results have been negative. The theory of yellow fever has been exploded, and Dr. Scott advances the suggestion that "the rapidity of progress (or, in rarer instances, rapid and complete recovery) rather indicates the action of a poison," adding that "since feeding experiments have proved negative, and chemical tests (which in former years have been repeatedly tried by the island chemist) have revealed none of the usual poisons, and no signs of alkaloids, the poison (if such it be) is one which rapidly leaves the stomach or is rapidly decomposed: for example, it may be of the nature of a glucoside," and "the only suggestion I can offer as to the source of this hypothetical poison is that, since one can never obtain any history to implicate any particular article of food, it is due to something which is apparently dangerous only at certain times of the year, some fruit, perhaps, or vegetables, or, what in my opinion is more probable, some growth (fungus, yeast, moulds, &c.) on or in this food, rendering it toxic."

Dr. L. Sambon also visited the island, accompanied by Captain Siler, M.D., of the United States army, to make investigation into the prevalence of pellagra, and the Government bacteriological staff is continuing the investigation.

The Central Board of Health has given much attention to questions of public health, especially in connexion with measures for the prevention of plague, for the destruction of the hook-worm, for the avoidance of infection from consumption, &c. Certain leaflets prepared or obtained by them have been widely circulated, and the local health authorities are now in possession of regulations embracing a wide range of duties bearing on the prevention of diseases, the notification of infectious diseases, &c. Some system is gradually being infused into the operations of the local health authorities, and as these become more efficient it may be confidently expected that the health of the population will improve.

The Lepers' Home had 111 patients on March 31st, 1913. There were admitted during the year 22; 4 were discharged, 1 absconded, 8 died, leaving on March 31st, 1914, 120. The death-rate was 6 per cent. The medical superintendent reports that he has abandoned the treatment by nastin after a fair trial, and that he has been using "antileprol" for over two years with very excellent and gratifying results. He explains that "antileprol" is a refined product of chaulmoogra oil.

OFFICIAL MANNERS.

WE are asked by the clerk of the Ilford urban district council to state that the postcard, which was reproduced under the above heading in this column last week, was despatched, through the inadvertence of a temporary clerk, in mistake for another printed form of rejection intended to be sent in a closed envelope to unsuccessful applicants for appointments under the council. We understand that each applicant who received one of the offending postcards has now been written to to this effect, with an expression of regret for the error.

CEREBRO-SPINAL MENINGITIS IN CRETE.

Mr. E. C. D. Rawlins, His Majesty's Vice-Consul in Crete, in a recent report to the Foreign Office, writes: "The years 1912-13 have been noticeable for outbreaks of cerebro-spinal meningitis and, towards the end of the latter year, small-pox. The meningitis outbreak at one time assumed serious proportions, but the authorities took energetic action and the disease gradually died down. It appears, though, that it has become nearly endemic in the Candia district, and some cases are always to be found there. Candia seems to be peculiarly unhealthy, much more so than the towns of Canea and Rethymo, and this state of affairs is said to be due to the unsatisfactory water-supply in the former town. On the whole, however, it may be said that the island of Crete enjoys a most salubrious climate. The total population of the island at the last census was 336,151, that of the three principal towns being—Canea, 24,399; Candia, 25,185; and Rethymo, 9086."

PERKINS'S TRACTORS.

To the Editor of THE LANCET.

SIR,—Respecting these tractors, which have received interesting notices in THE LANCET of Sept. 12th (p. 728) and Oct. 10th (p. 928) last, I remember that Lord Byron's "English Bards and Scotch Reviewers" has a reference to them:—

> "The cow-pox, tractors, galvanism, and gas,
> In turns appear, to make the vulgar stare,
> Till the swoln bubble bursts—and all is air."

Quite true—as far as the tractors are concerned!

I am, Sir, yours faithfully,

Santiago, Chili, Nov. 16th, 1914. H. BOSHOUWERS.

KING ALBERT'S BOOK.

THIS handsome book,[1] published this week, is a worthy expression of world-wide tribute to the outstanding man and outstanding nation of an epoch. It contains 238 contributions in speech or song, music or picture from royalties and other potentates, diplomatists and statesmen, professors, artists, men and women of letters, ecclesiastics, scientists and medical men, of various nationalities. The editor, Mr. Hall Caine, contributes an introduction, and an excellent portrait of King Albert in uniform constitutes the frontispiece. The book is admirably bound and the work of the publishers cannot be too highly praised. The entire proceeds are to be devoted to the *Daily Telegraph* Belgian Fund. Many a waiting-room table will surely be enriched by its presence.

SUNSHINE AND STRAWBERRIES AT SALCOMBE.

A CORRESPONDENT writing from Salcombe, South Devon, states: "Last week (I am writing on Nov. 23rd) I had on my table peas, French beans, globe artichokes, tomatoes, and strawberries fresh from my garden, and grown without any special attention at all. The strawberries have been our chief dessert for more than six weeks now, although the same plants gave us a splendid crop in June. To-day roses are flowering gaily, and one can scarcely realise the awful weather experienced north. Those fortunate enough to live in the houses sheltered from the north-east enjoy a warm and sunny environment. Last winter we found an aloe in full flower and bunches of subtropical flowers were gathered." All this within five hours' journey of London should sound attractive to those needing real rest in these troublous and strenuous times.

ROYAL METEOROLOGICAL SOCIETY.

AT a meeting of the Royal Meteorological Society held on Dec. 16th at the Surveyors' Institution, Westminster, a paper was read by Mr. A. E. M. Geddes, M.A., entitled "Observations of the Upper Atmosphere at Aberdeen by Means of Pilot Balloons." The observations were made at the Observatory, King's College, during the years 1912 and 1913, and in every case two theodolites were used, thus securing an accurate determination of the flights to a level of 3000 metres. In clear weather the upward velocity of the balloon was shown to be fairly uniform, but to depend on more than the free lift. When clouds are present they influence considerably this velocity, the effect differing according to the nature of the cloud. The gradient wind velocities and directions have been calculated and a useful comparison made with those actually found by observation.

A SERVICE MATCH-BOX COVER.

Messrs. Bryant and May, of Fairfield Works, Bow, London, E., have just introduced a metal match-box cover designed for the use of officers and men in the Expeditionary Force. The cover affords protection to the matches and rubber against wet. Its shape resembles a miniature coal-scuttle, with a hinge and pin at one of the corners. The device will no doubt be appreciated.

BARNET X RAY PLATES.

WE have received from Messrs. Elliott and Sons, Limited, samples of the Barnet X Ray Plates, which have been exclusively prepared for radiographic purposes. They are rich in silver, and we have found it easy to obtain good results with exposures rather less than usual. They seem sensitive to the fluorescence of the intensifying screen, and should become popular for this purpose. Development is the same as for other plates, and they appear to give equally good results with

[1] London: Hodder and Stoughton. Pp. 188. Price 3s.

any of the developing agents in ordinary use. We note that a useful size for taking radiographs of the long bones has been introduced—10 in. × 6 in.—which effects a saving over the usual 10 in. × 8 in., the extra 2 inches width of the latter representing so much waste in a large proportion of the exposures made.

WE have received from the publisher, Mr. T. Askew Miller, of Capetown, a useful little pamphlet on the House Fly, a Carrier of Disease and Death, compiled by Mr. F. W. Fitzsimons, F.Z.S., of Port Elizabeth Museum. The first edition of 10,000 copies has been distributed free amongst the columns of the South African forces in the field, with a view to enlisting the active coöperation of the men in the destruction of flies as the carriers of typhoid and other diseases. The pamphlet describes in simple terms the life history and habits of the fly, and the importance of conscientious attention to the carrying out of sanitary measures is thus enforced.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Dec. 16th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 10	29·510	N.	0·03	53	47	42	43	44	Raining
,, 11	29·594	E.	0·30	49	46	39	40	40	Overcast
,, 12	29·460	S.E.	0·25	51	46	40	44	44	Raining
,, 13	29·230	S.W.	0·40	63	50	44	45	46	Raining
,, 14	28·820	S.W.	0·41	62	51	44	44	45	Overcast
,, 15	29·020	N.E.	0·06	50	45	42	41	42	Raining
,, 16	29·664	W.	...	60	47	40	41	42	Overcast

The following magazines, journals, &c., have been received:—Political Quarterly, St. Paul Medical Journal, Monthly Cyclopedia, J. B. Murphy Clinics, Nordiskt Medicinskt Arkiv, Review of Neurology and Psychiatry, Maryland Medical Journal, American Journal of Medical Sciences, Surgery, Gynecology, and Obstetrics, Albany Medical Annals, Cleveland Medical Journal, Pharmaceutical Journal.

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R.—Royal Gwent Hospital, Newport, Secretary of; R. I.; R. H. S.; Royal College of Surgeons of England, Lond., Secretary of.

S.—Mr. W. Stevenson, Crieff; Society for the Abolition of Vivisection, Lond., Secretary of; Shaftesbury House, Formby, Secretary of; S. N.; Sherburn Hospital, Durham, Secretary of; Stoke-on-Trent, &c., Rural Joint Hospital Board, Secretary of; Dr. H. L. Smith, Lond.; Mr. H. Smith, Bury St. Edmunds; Salford Union, Clerk to the; Messrs. Spiers and Pond, Lond.; Messrs. W. H. Smith and Son, York; Surgeon, Weymouth; Lieutenant G. Scott, Hatfield; Smith's Advertising Agency, Lond.; Surrey County Asylum, Merstham, Clerk to the; Sheffield Corporation, Treasurer to the; Mr. W. B. Simmons, Sidcup.

T.—Mr. C. F. Thackray, Leeds.

V.—Victoria Hospital, Burnley, Secretary of.

W.—Dr. W. R. Watson, Tokyo; Miss Willmott, Guildford; Dr. W. G. Willoughby, Eastbourne; W. S. S.; West Ham Hospital, Secretary of.

Y.—Dr. R. McKillop Young, Hulan Fu, China.